



Structured to Fail? Explaining Regulatory Performance under Competing Mandates

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Abstract

Following each of three major disasters—the financial crisis, the Gulf oil spill, and the nuclear meltdown in Japan—policymakers responded by overhauling the associated regulatory infrastructure. In each case, the response was intended to sharpen the regulator’s focus, predicated on the widely held view that asking an agency to satisfy both regulatory and non-regulatory roles induces organizational conflict and impedes performance. In this dissertation, I put this commonly accepted belief about agency structure to the test by analyzing the behavior of regulators also assigned significant, non-regulatory functions. Incorporating data on a broad set of U.S. federal agencies, I first establish that the conventional wisdom holds some truth: Regulators that combine purposes do not perform as well. Even so, through a mix of statistical analyses, formal modeling, and an in-depth study of the former U.S. offshore oil and gas regulator, the Minerals Management Service, I show that assigning regulatory and non-regulatory functions to one agency can, in some cases, still be better than dividing them between agencies.

I demonstrate that while the goal ambiguity and conflict introduced by combining roles does impact behavior, overemphasizing this issue misses several important factors affecting regulators tasked with non-regulatory aims. These factors explain both how regulators operate when charged with achieving other goals and why these multiple-purpose mandates persist. First, although the goals may conflict, the underlying tasks supporting these divergent purposes may still require extensive coordination. Second, even within agencies, introducing features that encourage separation between the affected groups can allow regulators to manage ambiguity, but these efforts can simultaneously exacerbate difficulties in achieving synergies generated through

close contact. Third, even when the conditions for conflict are present, political and public preferences—and not just internal factors—can play important roles in shaping agency priorities. Fourth, broader social, industry, and environmental shifts can attenuate or accentuate the organizational tension that exists between managing goal ambiguity while encouraging underlying coordination. In sum, only by recognizing roles for a diverse set of forces—operations, organization, politics, and environment—can the existence, behavior, and performance of regulatory agencies that balance non-regulatory mandates be logically explained.

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Chapter 1

Linking Regulatory Failures to Organizational Design

To prepare for the meeting of the conference committee which would ultimately produce the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), in March 2010, the House Committee on Financial Services held a hearing to examine the structure of the Federal Reserve in the wake of the worldwide financial crisis (Committee on Financial Services 2010). The discussion centered on two issues. The first was whether the Federal Reserve's core function to formulate and implement monetary policy was aided or harmed by its concurrent role to regulate bank operations. The second revolved around the relative merits of separating the same banking regulatory function from the Federal Reserve's consumer protection responsibilities. During his opening remarks at the conference committee meeting, Congressman Bachus underscored the importance of these decisions, suggesting, "It is worth examining whether the Federal Reserve should conduct monetary policy at the same time it regulates and supervises banks...It is no exaggeration to say the health of our financial system depends on getting this answer right" (Committee on Financial Services 2010, p. 2).

Several others who testified at the hearing, including Federal Reserve Chairman Ben Bernanke and former Chairman Paul Volcker, stressed that the institutional knowledge and expertise possessed at the Federal Reserve made it uniquely qualified to oversee large banks and the financial system overall. Furthermore, proponents of the system's existing structure described the important role that close interaction with banks played in enhancing the Federal Reserve's ability to serve as the U.S. central bank. Not only did its supervisory function allow the Federal Reserve to make more informed decisions as lender of last resort, direct interaction with banks provided valuable data which could be used to appropriately set monetary policy.

In contrast, opponents argued that the failures of several large banks under the Federal Reserve's supervision revealed clear evidence of its inability or unwillingness to adequately regulate. As a case in point, despite having several officials on site, Congressman Bachus noted that the Lehman Brothers' bankruptcy examiner report revealed that neither the New York Federal Reserve Bank nor the Securities and Exchange Commission was able to keep Lehman Brothers from using "accounting gimmicks to hide its debt and mask its insolvency" (Committee on Financial Services 2010, p. 2). According to critics, the Federal Reserve's core focus on monetary policy diminished its ability to devote sufficient attention to its role as bank overseer. Worse still, combining the functions created "inherent conflicts of interest where the Fed might be tempted to conduct monetary policy in such a way that hides its mistakes by protecting the struggling banks it supervises" (Committee on Financial Services 2010, p. 3).

Ultimately, the Dodd-Frank Act did not end up formally removing bank supervision from the Federal Reserve's set of responsibilities. Even so, the legislation did create a Vice Chairman for Supervision, a government official to be appointed to the Board of Governors by the President of the United States to "develop policy recommendations for the Board regarding supervision and regulation" in an attempt to elevate that function within the organization (Dodd-Frank Wall Street Reform and Consumer Protection Act 2010, Section 1108). In addition, the Act consolidated the consumer protection functions of the Federal Reserve and a host of other agencies including the Office of the Comptroller of the Currency, the Office of Thrift Supervision, and the Federal Deposit Insurance Corporation into a newly created Consumer Financial Protection Bureau (CFPB) (U.S. Senate Committee on Banking, Housing, and Urban Affairs 2010, pp. 2-3). Although formally still housed in the Federal Reserve, the CFPB, headed by a presidential appointee, was mandated to focus solely on protecting consumers in financial

markets, thus becoming the first federal agency of its kind (Dodd-Frank Wall Street Reform and Consumer Protection Act 2010, Section 1011, Dugas 2010).

While the debate over the Federal Reserve may seem exceptional considering the enormous impact of the associated housing meltdown and collapse of worldwide financial markets, the debate typified by the March 2010 hearing was far from the only example of regulatory reform triggered by failure around that same time. Just over one month later, in April 2010, the spill of several million barrels of oil into the Gulf of Mexico as a result of an explosion and subsequent fire on the BP-leased *Deepwater Horizon* drilling rig prompted a series of investigations and hearings. Many of these inquiries focused on Minerals Management Service (MMS)—the Department of the Interior’s (Interior) regulator of offshore drilling at the time. A leading theory associated with these policy discussions pinned MMS’s “laissez-faire” (Waxman 2010) attitude toward regulating offshore drilling and production on initial decisions about how to structure the agency when it was created in 1982 (Flournoy et al. 2010, Honigsberg 2011). Specifically, by combining oversight of offshore oil and gas drilling with both tax collection and development responsibilities in a single agency, Interior had allegedly laid the foundation for the Gulf disaster.

In reacting to this consensus view, approximately one month after the onset of the spill, the Department had already initiated the dissolution of MMS, announcing its intention to distribute MMS’s functions among three separate agencies within Interior. In describing the restructuring, Secretary of the Interior Salazar indicated that MMS “has three distinct and conflicting missions that—for the benefit of effective enforcement, energy development, and revenue collection—must be divided” (Office of the Secretary of the Interior 2010a). By the beginning of October 2010, the Office of Natural Resources Revenue had been created to manage MMS’s tax collection responsibilities. In October 2011, the regulatory and development functions were

officially split through the creation of the Bureau of Safety and Environmental Enforcement and the Bureau of Ocean Energy Management from the agency within Interior initially created to replace MMS—the Bureau Ocean Energy Management, Regulation and Enforcement.

Six months after the BP well was permanently closed, the March 2011 earthquake and tsunami in northern Japan placed yet another regulator at the center of prominent policy reform discussions. While initially focused on the devastation from the tsunami itself, news coverage quickly turned to the impending nuclear meltdown at the Fukushima Daiichi power plant and, with it, questions about the effectiveness of the industry’s regulator—the Nuclear and Industrial Safety Agency (NISA). In a policy debate eerily reminiscent of that associated with the Gulf oil disaster, by April, news agencies were already lamenting the “collusive ties that bind the nations’ nuclear power companies, regulators and politicians” (Onishi & Belson 2011). According to critics, locating NISA within the Ministry of Economy, Trade and Industry sapped the agency’s willingness to provide the necessary oversight of nuclear plants since the Ministry was also in charge of promoting nuclear power. This led to a call by Prime Minister Naoto Kan among others for the “separation of the current Nuclear and Industrial Safety Agency from the Ministry of Economy, Trade and Industry” (Japan Times 2011). By the middle of August, Goshi Hosono, minister assigned to oversee the nuclear crisis, had already announced a restructuring of NISA. As a response to allegations that NISA was “too cozy with the nuclear industry in the years before the March disaster” (CNN 2011), the Nuclear Safety Agency was created through the merger of NISA and the Nuclear Safety Commission, which had previously been advisory body in the Prime Minister’s Cabinet Office (Japan Times 2011). Moreover, the new agency was positioned in the Environment Ministry, completely removing the Ministry of Economy, Trade and Industry from involvement in nuclear oversight.

In addition to its similarities to the controversy resulting in the termination of MMS, the reorganization of NISA and associated policy discussion exactly paralleled the U.S. political debate over regulation of nuclear power some 35 year earlier. After years of mounting allegations in the 1960s and early 1970s that its regulatory programs were not rigorous enough to prevent disaster and mitigate harm if a meltdown occurred, the Atomic Energy Commission (AEC) was split into two parts by the passage of the Energy Reorganization Act of 1974 (Hacker 1994, Rolph 1979, U.S. Nuclear Regulatory Commission 2011). Again, the focus of the reorganization was the dual structure of AEC which had been charged with both promoting nuclear power and ensuring its safety (Rolph 1979). By creating both the Nuclear Regulatory Commission to oversee industry operations as well as the Energy Research and Development Administration to facilitate expansion of nuclear power, Congress had “at least addressed one of the most serious long-standing complaints against the AEC” (Hacker 1994, p. 254). Not only had its dual structure apparently impeded its ability to regulate as in the case of Japan’s NISA, but also by separating the two functions in response, the enacted remedy for AEC’s problems closely mirrored the response to the disaster at Fukushima Daiichi.

Organizational Reform in Regulatory Crisis

Along with the September 11, 2001 terrorist attacks, the financial meltdown, Gulf oil spill, and nuclear disaster in Japan arguably represent the most pressing crises of the first 11 years of the 21st century. However, as the above descriptions have demonstrated, these calamities share commonalities that extend well beyond this fundamental observation. In focusing critical attention on the regulatory agencies in charge of oversight of the associated industries, the policy debates following the onset of each crisis pointed to shortcomings in regulatory design to help

explain why the failures occurred. Specifically, these discussions centered attention on the multiple roles that the regulators in charge were asked to fulfill and the conflicts that such arrangements created. Because NISA was located in the Japanese ministry in charge of promoting the nuclear power industry, how could the agency be fully committed to ensuring that nuclear power plants were operating safely? Did the regulatory function not require the agency to restrict activity at the very same companies that the Ministry of Economy, Trade and Industry sought to support? Since the Federal Reserve sets monetary policy, would it not be tempted to downplay bank problems uncovered through its examinations if these revealed evidence that it made bad policy decisions? How could one expect MMS to adequately regulate offshore oil and gas operations when it was also facilitating exploration through its role in selling leases to the same oil companies? Furthermore, since the amount of tax revenue collected is largely determined by how much oil and gas is produced, would not collecting taxes from these companies further compromise MMS's willingness to restrict production through stringent regulation?

Beyond simply occupying pages of congressional testimony and popular newspapers, the belief that organizational structure was important in explaining each of these crises also played prominently in the resulting reforms. The notion that joining bank regulation and monetary policy had weakened the Federal Reserve's impetus to adequately perform the former function prompted the decision to create an additional position on the Board of Governors, a presidentially appointed Vice Chairman in charge of bank supervision. The associated conclusion that the financial regulatory infrastructure—of which the Federal Reserve is a prominent part—collectively ignored their consumer protection functions in order to focus on their core roles was the impetus for the formation of a completely new agency, the CFPB, with

an operating budget of \$356 million just over a year after its creation (Consumer Financial Protection Bureau 2012).

As for U.S. offshore oil and gas as well as Japanese nuclear regulation, the reforms were even more dramatic. In both cases, the perception that the agency's role in facilitating energy development impeded adequate oversight by encouraging close ties between the industry and the regulator prompted the complete restructuring of the regulatory agencies. In creating the Nuclear Safety Agency from both NISA and the Nuclear Safety Commission and positioning it in a different ministry, Japanese authorities completely overhauled the nuclear regulatory infrastructure just five months after the initial earthquake and tsunami. These changes were a response to the notion that NISA's compromised relationship with industry was prompted by its organizational design. Similarly, announcement of a plan to dissolve MMS and reorganize government offshore oil and gas operations under three separate agencies came almost immediately after the initial oil rig explosion and was driven by the view that the combination had encouraged, in President Obama's words, "a scandalously close relationship between oil companies and the agency regulates them" (Obama 2010c). As echoed in the remarks of Secretary Salazar, the solution then was to carve up the agency to eliminate the conflicts that had encouraged the regulatory decay.

In his celebrated book, *Bureaucracy*, James Q. Wilson tells us that, "Organization matters, even in government agencies. The key difference between more and less successful bureaucracies...has less to do with finances, client populations, or legal arrangements than with organizational systems" (1989, p. 23). Viewed through the lens of the Gulf oil spill, the financial crisis, and the Japanese nuclear meltdown, it is clear that when it comes to regulatory agencies, Wilson is correct that organization matters. For evidence, one has to look no further than the

associated reforms which were in large part efforts to improve existing organizational structures. Regardless of whether ill-conceived regulatory designs actually laid the foundation for any of these disasters, the responses of the policymakers in charge of the reforms suggest they believed that they did. Or at least that these policymakers believed reorganization was a viable way to respond to the crises and ameliorate the discontent these events created. Even without investigating the factual bases for these claims, these episodes then suggest that regulatory structure is meaningful since the perception that it is can drive reactions to failures in regulated industries. However, this realization also underscores the importance of devoting critical attention to the hypothesized connection between regulatory structure and performance.

Connecting Regulatory Structure to Performance

The first goal of this study then is to move beyond conventional wisdom, not accepting that regulatory organizational design matters because people believe it does but rather determining whether it actually matters for regulatory agency performance. It is therefore not to put to the test the first sentence of Wilson's assertion that organization is important, but rather it is to evaluate in the context of regulatory bureaucracies his claim that immediately follows—that organizational systems are the key that define bureaucratic success and failure. Relative to the disasters described above, this aim means ascertaining the extent to which an organizational system which combines regulatory and non-regulatory functions in a single agency can help us to explain such failures as the financial disaster, oil spill, and Japanese nuclear meltdown.

Scholars of political science and public administration have long believed that government agencies that are tasked with vague goals perform worse than those that are not (Chun & Rainey 2005a, Wilson 1989). Referred to as goal ambiguity, this uncertainty can originate because, for

example, the statutes that guide agency behavior can be ambiguous, making it difficult to translate the broad pronouncements into clear directives (Locke & Latham 1990). Alternatively, ambiguity may result because the organization is tasked with multiple goals (Drucker 1980, Shalala 1998), a problem that is particularly acute in cases where the goals actually conflict. As we will see in the case of MMS, a decision on how to structure the agency at its inception can sometimes explain the particular combination of functions found in the organization later. However, as Martha Derthick describes in her study of the effects of commissioning the Social Security Administration to evaluate disability claims in addition to paying social security recipients, a decision by policymakers to locate a new function in an existing organization may drive the ambiguity as well (1990). Sometimes referred to as priority ambiguity (Chun & Rainey 2005a), most evidence linking the choice to join functions to organizational behavior is confined to case studies in policy areas such as financial markets and welfare benefits administration (Khademian 1995, Meyers et al. 2001). Even so, recent statistical studies have begun to show that the harmful effects of goal ambiguity on performance are not simply confined to isolated examples (Chun & Rainey 2005b, Jung & Rainey 2009).

Through this investigation, we will see that incorporating the insights derived from the aforementioned goal ambiguity literature is important to understanding the behavior of the Federal Reserve, MMS, and NISA. However, the question of whether the recent tragedies were precipitated by organizational structure is paradoxically both narrower and broader than the evidence accumulated by scholars of goal ambiguity can adequately answer. This study is more limited in the obvious sense that the research is focused on regulatory agencies in particular, whereas the ambiguity literature considers a wider range of government organizations. At the same time, the questions raised by these regulatory disasters are more general because they ask

whether design in itself has an impact. Thus, the question is not confined to a particular reason why regulators tasked with non-regulatory goals behave differently or even that they do. In other words, understanding whether regulators such as those associated with the recent failures perform worse is more foundational than determining whether organizations saddled with ambiguous goals perform worse. If we find that such agencies behave differently or produce inferior outcomes, we can then begin to question why they do. Positioning the study this way—which follows quite logically given that the organizational responses to the financial crisis, oil spill, and nuclear disaster are its catalyst—at least raises the possibility that, in uncovering the impact of structure on behavior and performance, multiple mechanisms might be at play.

It is not surprising, then, that the first issue I seek to address in this research is the extent to which regulatory agencies tasked with other important functions—agencies which I refer to as multiple-purpose regulators throughout this investigation—actually produce inferior outcomes. Do regulators charged with important non-regulatory tasks perform worse than agencies that do not? Alternatively, do they not exhibit meaningful differences or actually perform better than other types of agencies? While answering these questions includes investigating the roles that combining regulatory and non-regulatory functions at the Federal Reserve, MMS, and NISA actually had in prompting the disasters, it also requires extending the discussion beyond these recent cases. Even to the extent that organizational structures did help trigger the aforementioned tragedies, these instances cannot tell us whether the association between regulators that are saddled with important non-regulatory functions and regulatory failure is true outside of these narrow circumstances. Are the examples highlighted above symptomatic of a larger problem in regulatory organization or do these cases simply represent anomalous examples of multiple-purpose regulators whose dual structure actually impacted the behavior of

the organization as a whole? In the chapters that follow, I not only examine in detail the effect of a multiple-purpose structure on performance at an individual agency (MMS), I also study the effects of combining regulatory and non-regulatory functions on performance at a broad set of U.S. federal agencies.

Examining the Mechanisms

As the above introduction to the goal ambiguity literature demonstrates, inquiring into the extent to which regulatory structure affects behavior is closely connected to the question of why these arrangements produce the effects they do. Thus, the second aim of this study is to determine what drives relative performance and behavior. For example, if multiple-purpose regulators do perform poorly as the policy discussions associated with the recent crises suggest, why is it that they do? Alternatively, if some regulatory agencies saddled with other goals do better, what drives this association? This study not only examines the impact of organizational design on variance in regulatory behavior, but it also explores the mechanisms by which that relationship exists.

The examples of the failures in the financial, oil and gas, and nuclear industries present a fairly consistent view of how regulatory organizational design contributed to the disasters. In each case, the argument posits that combining non-regulatory tasks with regulatory functions encouraged a regulatory laxity borne from focusing too much attention on the other tasks. In addition to being consistent with each other, the explanations for how organizational design played into the tragedies are also remarkably coherent with how scholars have suggested agencies tasked with multiple goals might respond. Although agencies attempting to assimilate the various functions placed with them may either set very broad goals or increase the number of

goals to incorporate their full scope of responsibilities (Gormley & Balla 2007), the outcome is similar. As the associated complexity facing the organization increases (Lee et al. 1989), the agency is confronted with the possibility that personnel may become confused as they attempt to either balance potentially competing goals or navigate the uncertainty that accompanies very broad directives (Locke & Latham 1990).

The result is that the agency asked to balance functions with different goals may decide to emphasize one goal over the others in an effort to mitigate the potential for confusion (Dewatripont et al. 1999, Drucker 1980, Shalala 1998). In fact, scholars studying remedies for organizational complexity actually encourage this response (Drucker 1980, Shalala 1998, Wilson 1989). When achieving one of the goals actually impedes successful implementation of the other, neglecting a mission might be the only option (Wilson 1989). Of course, this is precisely the argument that commentators examining the organizational designs of the Federal Reserve, MMS, and NISA have used to connect their structures to the recent disasters.

As demonstrated through the March 2010 House Committee on Financial Services' hearing, critics of the Federal Reserve posed that its role as U.S. central banker left the agency little time to devote to bank examining (Committee on Financial Services 2010). Although reasonable, this explanation rests on the assumption that adequately regulating even the largest U.S. banks is of second order importance relative to properly managing monetary policy. Thus, the Federal Reserve would naturally focus on the latter to the detriment of the former, even if it meant completely subverting regulatory oversight as a result. Furthermore, exacerbating the tendency to want to abandon its regulatory role for the more salient function, opponents of the combination also pointed to the distorted incentives the Federal Reserve had to protect its

monetary policy decisions by presenting its regulatory findings more favorably (Committee on Financial Services 2010).

The fundamental arguments for how organizational design affected decision making at NISA and MMS are very similar. In addition, the claims are well aligned with the observations of writers like Wilson, Peter Drucker, and Donna Shalala, who find that an agency should narrow its focus in response to priority goal ambiguity (Drucker 1980, Shalala 1998, Wilson 1989). However, while supporting the broader conclusion that government agencies tasked with competing goals may concentrate on a subset, relative to the Federal Reserve, critics of NISA and MMS point to a somewhat different mechanism to explain the shift in focus away from regulation. Although not necessarily inconsistent with the commentary surrounding the Federal Reserve's role in the financial crisis, the impact of organizational design in creating the conditions for the Japanese nuclear meltdown and the Gulf oil spill also includes prominent roles for corporate interests. The "cozy" and "scandalously close" relationships between both NISA and MMS and their regulated entities conjure up notions of regulatory capture—a condition whereby the government regulator begins to regulate for the benefit of the regulated entities instead of the public good (Bernstein 1955, Carpenter & Moss forthcoming, Peltzman 1976, Stigler 1971). Interestingly, many also view the financial crisis as having been precipitated by the financial industry's capture of regulators including the Federal Reserve (Baker 2010, Johnson & Kwak 2010). However, unlike classic examples of capture such as that described in Samuel Huntington's account of the interaction between the Interstate Commerce Commission and the railroads, in which each defended the other's efforts to subvert competition (1952), here capture is advanced through the regulator's organizational structure.

For critics of NISA and MMS, combining industry support functions with regulatory oversight placed each agency in a difficult position in terms of its relationship with its regulated entities. For example, not only was MMS to facilitate the use of federal offshore energy resources to secure U.S. energy independence—thereby aligning its purpose with industry—this mission was thought to have caused it to have become beholden to these same firms (Flournoy et al. 2010, Peters 2010). NISA’s role and organizational position produced a similar outcome. No longer able to remain impartial in its evaluation of how safely power plants like Fukushima Daiichi were being operated, regulatory performance suffered, leading to disastrous consequences (Onishi & Belson 2011).

Still, whether the argument is that the non-regulatory task facilitated the capture of the associated regulator or rather that the non-regulatory function was simply considered more important, those who have connected the prominent failures to the organizational structures of the Federal Reserve, MMS, and NISA nevertheless agree that the “other” role sapped the agency’s willingness to focus on regulation. However, can it be this straightforward? Does goal ambiguity created by combining regulatory and non-regulatory tasks explain what happened to undermine the regulatory infrastructure designed to control oil and gas, financial, and nuclear energy companies? It would seem that at least in principle an agency could instead abandon the non-regulatory task to focus more attention on oversight. As the scholars who have studied goal ambiguity make few predictions about how the potential conflict between tasks will play out, the question arises: Do multiple-purpose regulators potentially driven by industry interests always feel pressure to abandon their regulatory goals in such a scenario? Alternatively, can regulation instead take precedence over non-regulatory functions? If so, what are the forces internal and external to the agency that drive this choice? Even more fundamental, why does a multiple-

purpose regulator feel the need to abandon either task? Notwithstanding the arguments of some political science and management scholars that warn against pursuing multiple goals (Drucker 1980, Shalala 1998), it would seem that if assigned two tasks, a faithful agency should try to fulfill both simultaneously. To what extent can regulators position themselves to accomplish regulatory and non-regulatory tasks simultaneously? To answer these questions, in the chapters that follow, I analyze the organizational, social, political, and environmental mechanisms by which combining functions may impede or enhance the performance of a regulator.

The Politics of Regulatory Design

In addition to studying both the extent to which these recent salient examples of disaster signal an organizational problem as well as the mechanisms by which the link between multiple-purpose regulators and behavior may function, this study's final goal is to uncover reasons why such combinations are created in the first place. If multiple-purpose organizations do in fact perform worse, it certainly seems inefficient to create regulatory agencies that must simultaneously fulfill other—and sometimes apparently conflicting—goals. Why not ensure that organizations with regulatory missions are not saddled with other functions? In other words, why have multiple-purpose regulators at all? Further, given that there are many examples of such agencies, what causes policymakers to cobble together regulatory and non-regulatory goals into one organization?

At one extreme, it might just be that the organizational designs of the Federal Reserve, MMS, and NISA represent simple mistakes, caused either by inefficiencies in the political process or by cognitive limitations. Research on policy implementation has clearly demonstrated that it is impossible to foresee the multitude of potential issues that may arise in transforming

political directives into action at the agency level (Bardach 1977, Pressman & Wildavsky 1984). In addition to decreasing the likelihood that policies are executed successfully, the complexity of implementation provides policymakers with little hope of generating legislation and making delegation decisions that incorporate the possible contingencies. Furthermore, these impediments do not even consider the additional complication that policy is forged in the political arena, giving a large number of stakeholders a say in its creation (Sabatier 1999).

Adding to the inefficiencies is the role that symbolic politics may play in motivating lawmaker's actions (Edelman 1967). As David Mayhew explains, the term "symbolic can...usefully be applied where Congress prescribes policy effects but does not act (in legislating or overseeing or both) so as to achieve them" (1974, p. 132). Because policy pronouncements rather than achievements are what typically drive voter decision making, "position-taking politics may produce statutes that are long on goals but short on means to achieve them" (Mayhew 1974, p. 134). In addition to not knowing how to do it, assigning policy to agencies will often then be an afterthought for politicians because such decisions typically lack salience to voters. A consequence is that policy delegation is likely to be ad hoc. Moreover, the statutes themselves may be riddled with vacuities, conflicts, mistakes, and unresolved issues (Majone & Wildavsky 1984).

The result—particularly if there are any benefits at all to combining regulatory and non-regulatory operations—is that we should not be surprised that poorly functioning multiple-purpose regulators exist. If political forces would support the creation of agencies with the express purpose of accomplishing the work of government most efficiently, we should be unlikely to see such agencies. Even so, impediments and a general disinterest in the process of assigning policy to agencies would still explain the existence of poorly performing multiple-

purpose regulators. In this context, any reforms meant to encourage better regulatory performance should be focused on the political process itself in an effort to prevent multiple-purpose regulators from being formed in the first place.

In contrast to the view that the political process breeds mistakes which result in multiple-purpose regulators, it might instead be that agencies are deliberately designed to combine regulatory and non-regulatory functions. This could be true regardless of whether multiple-purpose regulators generally perform worse than other agencies. In fact, within the context of the literature debating the extent to which politicians control agency activities (see, e.g., Wood & Waterman 1991), Terry Moe explains that agencies can be designed inefficiently on purpose (1989, 1990, see also Cohen et al. 2006). This organizational feature makes the affected agencies less able to act autonomously, and more likely to remain under the control of the president and Congress. The more inefficient the government agency is, the less likely it is to be able to act quickly and decisively, thereby making political oversight less challenging. Thus, to the extent that the organizational confusion introduced by combining regulatory and non-regulatory functions slows down agency decision making, the tradeoff of increased control for poor overall performance may be worth it especially if policy drift is important to the lawmaker.

Finally, removing politics altogether, multiple-purpose regulators may exist simply because they are better than the alternative. Without actually observing the counterfactual where the associated functions are carried out in separate entities, one cannot actually know whether splitting regulatory and non-regulatory functions might actually make things worse. Could it be that regulatory agencies that combine other functions would outperform other arrangements precisely because the peculiarities of the specific policy environments require them? In this world, even if combining non-regulatory tasks with a regulator does cause the agency to shift too

much of its focus to the former task, the optimal response might still not be to break up the agency.

To summarize this section, the question of why multiple-purpose regulators exist in the face of circumstantial evidence that they are not successful in carrying out their regulatory responsibilities presents a series of possibilities, many of which are interconnected. Are multiple-purpose regulators functions of political impediments that are inevitable given the multiplicity of actors involved and complexity of the process? Alternatively, as Moe might suggest, do politicians purposely structure some regulators this way so as to limit their ability to efficiently carry out policies, thereby increasing political control? Finally, are there hidden factors, obscured by a fixation on goal ambiguity, which can explain the existence of multiple-purpose regulators despite their shortcomings? By observing the political and social forces associated with the creation of multiple-purpose agencies as well as the interplay between their regulatory and non-regulatory functions, this study not only examines the mechanisms that explain relative performance, but it also seeks to understand the mechanisms that explain why multiple-purpose regulators exist at all.

Explaining Regulatory Performance under Competing Mandates: Overview

This chapter began by connecting three catastrophes in regulated industries by the reforms they inspired. Viewed by many as the most significant economic crisis in the U.S. since the Great Depression (Grusky et al. 2011), the Great Recession beginning in 2007 paved the way for the Dodd-Frank Act which, among other things, created an entirely new consumer protection agency and forced the reorganization of the Federal Reserve to encourage the agency to focus more attention on banking regulation. By far the largest oil spill and arguably the worst

environmental disaster in U.S. history (Fahrenhold & Mui 2010), the 2010 Gulf oil spill prompted the disbanding of MMS and a complete reorganization of Interior's offshore energy functions. The Japanese nuclear meltdown on the heels of the devastating March 2011 tsunami—considered the worst nuclear accident since Chernobyl in Russia in 1986 (Joskow & Parsons 2012, New York Times 2012, Washington Post 2012)—was the impetus for the creation of the Nuclear Safety Agency and the transition of regulatory responsibilities to the Environment Ministry. In each case, the conflicts of interest prompted by the existing regulator's role in either conducting monetary operations, collecting taxes, or facilitating energy production provided the justification for the governmental reform.

In addition to inspiring important public reform efforts, as described in the previous sections, the many questions raised by these catastrophes also demonstrate how closely the fallout from these events connects to issues raised throughout the literatures in political science, public administration, and economics: political delegation, capture, goal ambiguity, and the policy process. In the chapters to follow, we will continue to see how the insights from these literatures can help us make sense of the evidence uncovered in connection to the questions surrounding multiple-purpose regulators that are raised through this research. At the same time, I will show how the data and analyses associated with the examination of regulators that merge functions can help to inform and further refine scholarship. Because research along each line has advanced largely in isolation from the others, connecting them together to help explain the progression and behavior of multiple-purpose regulators can simultaneously drive their mutual development.

The connections between the political science, public administration, and economics literatures in many ways also drive the core arguments of this study. Through a mix of cross-

sectional analysis, case study, and formal modeling, I demonstrate that regulatory agencies that simultaneously balance important non-regulatory functions generally do perform worse. The evidence, thus, supports both the popular criticisms of the Federal Reserve, MMS, and NISA as well as the core insights of scholars studying goal ambiguity in government organizations.

However, this is not the end of the story. The chapters that follow also describe why assimilating even conflicting functions in a single government agency can still be optimal despite the fact that such agencies typically do not perform as well as those that do not combine regulatory and non-regulatory goals. In fact, I show that emphasizing the role that conflicting organizational goals may play in impeding an agency's ability to develop a cohesive sense of purpose misses several important features of multiple-purpose regulators that explain both why they exist and how they act. These features include: (1) the relative importance to the agency of coordinating the associated tasks; (2) the ability of a government organization to structure itself to mitigate goal conflicts; (3) the roles that political oversight as well as social preferences can have in defining agency priorities; and (4) the underlying connection between how the goals are affected by their environmental circumstances.

Certainly within economics, it is well understood that complementary tasks—where the performance of one assists completion of the other—are better off combined with the same individual or agency (Dixit 2002, Holmstrom & Milgrom 1991). However, this insight has not been incorporated into studies of goal ambiguity because tasks and goals are typically assumed to be synonymous. Yet in fact it is important to separate the two in order to understand how tasks associated with different goals can support each other, despite the goals themselves being in conflict. Explicitly considering this distinction both brings to the fore the friction that can

exist between goal ambiguity and underlying task coordination and suggests how organizational structure can affect the performance of multiple-purpose regulators.

In particular, in this study, I show that agencies can mitigate goal conflicts through organizational features embedded in an agency's creation which physically separate groups working to fulfill the conflicted goals. Alternatively, these divisions can arise naturally given differences in the core skills of the civil servants assigned to fulfill the regulatory and non-regulatory goals. However, at the same time intra-organizational divisions may allay the effects of goal ambiguity and conflict, they may simultaneously inhibit efforts to realize synergies between the underlying tasks, a possible reason why the agency was created as a multiple-purpose regulator initially. Thus, while a preference for achieving either goal clarity or task coordination can drive the decision to divide or create a multiple-purpose regulator, that same preference will likely impede efforts to achieve the end that is relatively ignored by the decision.

The research underlying this study also shows that even when the affected missions are pursued in close contact, such that the conditions for goal conflict are present, how well the agency performs will at least partially be driven by political and environmental factors that extend beyond the regulator itself. As with most regulators, interest groups can affect decision making at multiple-purpose regulators. Moreover, because such organizations balance additional functions, notwithstanding the conclusion from capture theory which asserts that interests will be dominant in regulatory arenas (Stigler 1971), here a broad set of politicians as well as the general public may exert influence over whether the regulatory function is subverted. Furthermore, these political and social forces will not be working in isolation. Rather, the connection between how industry and social shifts affect the regulatory and non-regulatory goals is important. As we will see, the extent to which these changes—although potentially beyond the multiple-purpose

regulator's control—are correlated will impact how much is gained by coordinating the tasks and how much is lost through goal ambiguity. Moreover, because the interaction between coordination and ambiguity has real consequences for performance, the analysis will demonstrate that understanding the environmental interdependencies associated with the goals is important for political principals to consider in deciding whether to separate or combine objectives to achieve their preferences.

Having previewed the core findings from this dissertation, in the remainder of this section, I briefly describe how the analysis unfolds in the remaining chapters. Part I, which includes Chapters 2 and 3, provides a statistical analysis of a large number of U.S. federal agencies that is designed to examine whether the alleged failures of the Federal Reserve, MMS, and NISA are reflective of the relative performance of multiple-purpose regulators more generally. The study also seeks to determine for a larger class of such agencies if goal ambiguity—the central critique of the agencies associated with the recent crises—is sufficient to explain relative differences in performance. In Chapter 2, I demonstrate that the alleged performance shortcomings of the multiple-purpose regulatory institutions tied to the disasters are indeed evident more broadly. The statistical results are the first to reveal that agencies that combine regulatory and non-regulatory functions generally perform worse in terms of the extent to which they achieve their performance goals. Furthermore, the conclusions hold even after controlling for a variety of factors that may separately impact outcomes including agency funding, political preferences, and policy focus.

In Chapter 3, I show that although it is a contributing factor, the most commonly cited reason for why consolidating regulatory and non-regulatory tasks leads to poor performance—that their combination produces goal ambiguity—is not sufficient to explain the relatively poor

outcomes. The statistical estimates illustrate that the presence of regulatory and non-regulatory functions in a single agency remains a significant predictor of performance even after controlling for the degree to which agency employees know how their tasks relate to agency goals.

Although the analysis does indicate that goal ambiguity is important in helping to explain multiple-purpose regulatory behavior, it also reveals that ambiguity is neither the only nor even the most important factor. The results also suggest that we should remain somewhat skeptical of accounts which rely on goal conflict as an explanation for the behavior of multiple-purpose regulators without peering inside the organization.

Part II builds on the findings of Part I through an in-depth examination of MMS's organizational and political development up to the time of the onset of the Gulf oil spill. Given the common view that MMS is a classic example of how adding incompatible functions to a regulator's domain can impede the agency's willingness to take sufficient care in its regulatory duties, the fact that closer examination reveals the countervailing need for MMS to synchronize these same functions underscores the significance of this additional effect. Furthermore, contrary to the allegations that mixing tax collection and regulatory missions forced MMS to subvert the latter, I show how the agency's organizational design—which firmly separated the two—allowed it to overcome this perceived limitation.

Specifically, Chapter 4 reveals that from the outset, MMS was structured to overcome previous failures in Interior's oil and gas tax collection and offshore energy development efforts. These failures were the result of goal subversion and neglect at the U.S. Geological Survey (USGS) and the Bureau of Land Management (BLM). Reviewing historical patterns of congressional oversight and budget decisions, I show that the common view that oil and gas revenue collection impeded effective offshore oversight is limited in its ability to explain

regulatory laxity at MMS. The vast separation between the revenue management and offshore energy groups belies any simple inference that one overshadowed the other. Furthermore, given that MMS was originally structured in response to this same problem at USGS, the conclusion that mixing revenue collection and regulation had less to do with the oil spill than is widely believed is not necessarily surprising.

In Chapter 5, I examine the second stated source of conflict at MMS, that between its functions of regulatory oversight and offshore energy development. I show that while the close interplay between the two functions fostered conditions under which regulatory goals could be subverted for development, this structure was again chosen because of the widely cited inability of BLM and USGS to coordinate the underlying tasks prior to MMS's creation. Furthermore, while creating the conditions for goal ambiguity through this organizational design, MMS's relative emphasis on development over environmental protection and safety was driven primarily by political pressure and public preferences rather than internal conflict at the agency.

Part III, which includes Chapters 6 and 7, draws together the insights derived from Parts I and II to show how the features of multiple-purpose regulators interact to explain relative performance and behavior. I formalize the notion that multiple-purpose regulators present a tension between goal ambiguity and task coordination while also incorporating roles for political forces and environmental factors. I demonstrate how the insights derived through the statistical analyses and case study of MMS can fundamentally alter the central conclusions of the small number of formal studies of agency design which provide few reasons why political principals should combine missions in government organizations.

The theoretical analysis in Chapter 6 demonstrates that although either conflict or coordination can be dealt with through structure, their combined effects can result in inefficient

outcomes regardless of how the agency is designed to address them. Unlike most existing formal modeling in bureaucratic politics which begins with the assumption that preferences of civil servants and their political principals diverge, this work also shows that organizational choices have implications for policy outcomes that do not rely on creating this wedge in preferences. Even when agency officials use their policy expertise to maximize their political principals' utility, the presence of goal ambiguity and uncertainty limits their ability to do so. At the same time, the relative value that politicians place on the goals individually and collectively is important in predicting how they will decide to organize their implementation.

In Chapter 7, I summarize the findings of this research and recommend various extensions. In doing so, I consider whether the insights derived can be simultaneously enriched by considering other contexts, particularly the extent to which the findings from this dissertation carry over to non-regulatory environments and private organizations. Moreover, I examine how the evidence uncovered in this study can help us predict whether multiple-purpose regulators—relative to other agencies—may be more or less receptive to political efforts to mold their actions. Building on the analysis in Chapter 6, I explore the role that popular views of the connection between the policy goals can play in influencing how agencies are organized. While this feature is not studied in great detail in Parts I and II, the theoretical results reveal that the extent to which purposes are similarly or dissimilarly affected by shifts in industry or social conditions can have important consequences for deciding to mix functions. In reexamining the historical development of MMS from this perspective, I show that the agency's creation as well as its breakup can potentially be explained by changing popular views of the connection between the agency's goals.

Part I

Broad Evidence on the Performance of Multiple-Purpose Regulators

Chapter 2

Isolated Effects or Widespread Dysfunction?

Research from psychology and behavioral economics has repeatedly demonstrated that people are often misled into thinking an outcome is more common than it really is when the examples presented are particularly memorable (see, e.g., Tversky & Kahneman 1973). Labeled the availability heuristic, this effect is intensified by the media which tends to focus news coverage on especially dramatic events (Shrum 2002). Does the availability heuristic also explain the common perception that multiple-purpose regulators perform poorly? Referencing the financial crisis, Gulf oil spill, and nuclear meltdown in Japan, Chapter 1 used a string of salient disasters in regulated industries to raise important questions about how organizational design affects regulatory performance. However, simply because we observe a handful of salient regulatory failures—even ones intensively covered by the media—this does not mean that the association between performance and organizational structure is systematic. Rather, particularly if the availability heuristic is at play, we might reasonably expect that the catastrophic events are not symptomatic of a broader pattern. Is this the situation here? Or do multiple-purpose regulators generally perform poorly?

More fundamentally, while the policy debates over the causes of these recent failures have focused attention on the organizational structures of the associated regulators, the evidence offered by no means proves that combining regulatory and non-regulatory functions was the catalyst for the problems. In fact, it could just be by chance that the two are associated with each other in the failures observed. Thus, if it is not certain that combining functions even at the Federal Reserve, MMS, and NISA perpetrated the subsequent regulatory difficulties, how can

one know whether the broader set of multiple-purpose regulators are impacted by their organizational designs?

Generalizing from the Recent Failures

In this chapter, I begin to answer these questions through a cross-sectional analysis of 144 U.S. federal government agencies. The primary data for this study are derived from an initiative of the George W. Bush administration called the Program Assessment Rating Tool (PART). Described in greater detail below, under the program, U.S. Office of Management and Budget (OMB) examiners in conjunction with agency representatives assessed the performance of very nearly the entire universe of U.S. federal government programs over a seven year period from 2002 through 2008. Using the scores generated through the PART project, I divide the set of agencies into those which mix regulatory and non-regulatory government programs and those that do not to determine how multiple-purpose regulators perform relative to other agencies. In addition to examining overall performance, I separately evaluate regulatory and non-regulatory effectiveness of multiple-purpose regulators as well.

Using this database and a mix of descriptive statistics, statistical tests, and regression analyses, I show that the alleged performance shortcomings of the small group of multiple-purpose regulators profiled in Chapter 1 are more widely shared. Compared to agencies that either solely regulate or do not regulate at all, those that combine regulatory and non-regulatory government programs perform worse on average as measured by the extent to which they achieve their goals in PART assessments. The regressions control for agency political preferences, relative funding, and, using dummy variables, the full range of latent differences in the underlying departments in which these organizations reside.

I further demonstrate that the patterns are not explained by either systematic differences in the performance of regulatory and non-regulatory programs within these agencies or performance deficiencies in agencies that combine government programs more generally. In fact, unlike common discourse surrounding the recent regulatory failures, the results demonstrate that agencies that combine regulatory and non-regulatory tasks perform equally inadequately on both. This finding contradicts arguments associating the recent disasters to the relevant agency's subversion of its regulatory responsibilities for its non-regulatory functions. I also show that the comparatively poor performance of multiple-purpose regulators is not typically replicated in federal agencies that mix other varieties of programs. Instead, in most cases, agencies that combine various types of non-regulatory functions do not perform worse than those that do not. This suggests that while not alone, multiple-purpose regulators seem to have particular characteristics that make combining other functions with their regulatory responsibilities more difficult.

Relative to assessments based on the financial crisis, Gulf oil spill, and nuclear disaster, the findings of this chapter are not nearly as dramatic given that the outward consequences of the inadequacies are measured by PART scores rather than catastrophes. Furthermore, they are not necessarily indicative of whether the organizational designs of the regulators associated with the recent financial and environmental disasters precipitated the specific calamities. More generally, although the plethora of commentators alleging a role for regulatory missteps in prompting the recent tragedies suggests otherwise, some disasters may be unavoidable in that they truly cannot be foreseen in advance (Viscusi & Zeckhauser forthcoming). Clearly, relative performance by agencies which balance non-regulatory functions will not be able to explain a failure prompted by a true outlier. Nevertheless, an agency's poor performance particularly in fulfilling its

regulatory goals should certainly be associated with failures—even dramatic ones—that can be tied back to regulatory lapses and general laxity.

In the end, precisely identifying the degree to which general performance deficiencies are correlated with the onset of catastrophes does little to affect the general conclusions of this chapter. The study is the first to move beyond individual cases to show that regulators which must undertake other major, non-regulatory tasks exhibit consistent differences in their performance. Moreover, the results are significant because they establish that regardless of whether it applies to the recent calamities, the hypothesis that regulatory structure inhibits regulatory performance has support in a much larger data sample. The cross-sectional differences confirm that the performance deficiencies among regulators that are tasked with other functions are widely shared and, thus, worthy of additional study.

Using PART Scores to Assess Performance

As described, OMB's PART scores formed the primary source of data for the cross-sectional analyses. PART was initiated by OMB to assess performance of government agency programs for budgeting purposes in response to President Bush's Management Agenda which called for "budget decisions based on results" (Office of Management and Budget 2003). The tool measured government program performance along four dimensions—purpose and design, strategic planning, management, and results/accountability—and also included a grade which was a weighted summary of the four dimensions. The first assessments were based on agency program performance as of 2002, and the tool was used to both update existing appraisals as well as initiate new evaluations through the end of 2008. Already by early 2007, OMB had evaluated

roughly 1,000 programs “representing about 96 percent of government and \$2.5 trillion of federal spending” (Portman 2007).

In addition to assessing performance on multiple dimensions, the PART worksheets categorized programs by type according to whether programs distributed funds, provided loans, provided services, generated research, acquired assets, or “employ[ed] regulatory action to achieve program and agency goals” (Office of Management and Budget 2003). For each program, the agency tasked with that program in association with OMB determined the appropriate categorization (Brown 2008). The program types are described in more detail in Appendix A. The assessments also included data on program funding. In the analyses that follow, data on program types and funding are used to determine which agencies combined regulatory and non-regulatory functions, to develop a weighted program results score for each agency, and to obtain a measure of total agency funding.

Because they represent one of the few data sources that attempt to standardize measures of agency outcomes such that results are comparable across agencies, researchers have begun to use PART scores to inquire into a diverse set of topics related to government performance. For example, studies have used PART scores to examine the extent to which agency budget allocations are affected by previous performance as well as to measure the relative success of political appointees as government managers (Gilmour & Lewis 2006a, Lewis 2007). Furthermore, some recent work has used PART to assess the effects of government program goal ambiguity as well (Jung & Rainey 2009, 2011, Thomas & Fumia 2009). However, despite growing scholarly interest in using PART data, the scores are not without their limitations. Although some of the objections to using PART data have been examined by other authors

(Gilmour & Lewis 2006b, Lewis 2007), I address these and other potential objections to their use before proceeding.

The bulk of the criticisms against PART can be summarized as concerns about measurement. Such reservations may stem from how measurement issues affect the extent to which the scores are externally valid, internally valid, or both. Focusing first on concerns that predominantly impact external validity, one may wonder, for instance, whether the scores at all present a meaningful evaluation of relative agency performance. In other words, do PART scores provide information on actual differences in performance between agencies? To at least partially address this issue, in the cross-sectional analyses that follow, I focus on the PART program's results/accountability scores, which were used "to rate program performance on goals reviewed in the strategic planning section and through other evaluations" and accounted for 50% of each program's composite grade (Office of Management and Budget 2003). By analyzing the portion of the PART scores that appraise achievement of results and not the composite scores which are formed as a weighted sum of all four dimensions, I am able to remove indirect influences on performance associated with PART's other three dimensions. For example, as one of these other dimensions, program purpose and design will have an effect on whether the agency generates good outcomes. However, the more precise measure of performance is not whether the agency has the infrastructure in place to succeed but rather whether the agency actually achieves the desired outcomes, a metric the PART results/accountability scores seek to capture. Moreover, in Chapter 3, I am concerned with whether goal ambiguity and conflict can explain multiple-purpose regulators' performance. As a result, the PART results/accountability scores—which directly examine the extent to which agencies achieved their goals—represent the most appropriate measure for that chapter as well.

Although focusing specifically on the actual performance dimension is likely to enhance the reliability of the PART measure, whether these scores contain real information on relative agency success also hinges on whether OMB was capable of appraising agency performance. PART relied on OMB to evaluate—through a process that involved agency input—program attainment of results (Brown 2008). For this reason, the scores might be subject to error depending on the competence of the OMB examiner involved in making the assessments. Even so, while it is likely that some OMB personnel were better than others at evaluating performance, the process itself involved more than one examiner’s opinion. PART scores were generated through interactions between OMB and the affected agencies. In addition to an appeals system, the procedures incorporated other groups within OMB, including the Office of Information and Regulatory Affairs and the Office of Federal Financial Management (Brown 2008). Thus, given the interactive nature of the process by which the scores were generated as well as its openness which I describe below, it would seem unlikely that the end result would be estimates of performance devoid of any real information.

Even to the extent that measurement errors do exist, they still will not necessarily impact the reliability of the estimate of the effect of combining regulatory and non-regulatory functions on agency performance. A dependent variable measured with error will still produce a consistent estimator in the associated regression as long as the measurement errors are not correlated with the variable of interest (Wooldridge 2002, pp. 71-72). The measurement problems will simply increase the size of the regression’s standard errors, thereby decreasing the likelihood that I find significant results. Thus, although measurement errors associated with PART will make it less likely that the relationship between multiple-purpose regulators and performance is significant,

the estimate itself will on average equal the true value when the errors are not correlated with the variable designating the presence of a multiple-purpose regulator.

However, while random measurement errors are not problematic in this regard, if the errors are correlated with whether or not an agency is a multiple-purpose regulator, the estimated effect on performance can be misleading. These issues will have consequences not only for the validity of the study itself, but also for the ability to generalize from the analysis. For example, one possible objection to PART is that relative agency scores might have been determined by agency political preferences rather than actual performance on goals (Moynihan 2008). Because the PART program was administered by President George W. Bush's OMB, one might be worried that agencies responsible for more conservative programs received better ratings. Even so, such bias would only be a concern if it was systematically associated with the presence or absence of both regulatory and non-regulatory functions in a single agency, an association which seems unlikely. More importantly, as described below, I include a measure of agency political preferences in some specifications to control directly for this factor. In those that do not contain a specific variable for political preferences, I include a series of dummy variables to control for differences in the government departments in which the individual agencies reside. To the extent that political preferences are correlated among agencies within departments, these dummies perform much the same function as the direct measure.

A second potential source of bias centers on the goal setting process itself. For example, perhaps OMB forced multiple-purpose regulators to set harder goals, thereby making it inherently more difficult for these agencies to achieve their objectives. The effect would then cause the entities to perform worse simply because they were pushed to set harder goals initially. While I present evidence in Chapter 3 that supports the notion that multiple-purpose regulators

perform worse at least partially as a result of the inherent difficulties associated with internal goal setting at these agencies, these differences are unlikely to be driven by OMB examiners. First, PART scores were prepared at the program level which, except in the few cases where the program itself was mixed, means that an agency's regulatory program was rated separately from its non-regulatory functions. Since the agency was not the unit of analysis for PART reviews, it seems unlikely that OMB examiners would have had reason to consider imposing special goal setting demands on multiple-purpose regulators. Moreover, the same examiner might not even have been responsible for evaluating both the regulatory and non-regulatory portions of the agency. Second, the goal setting process itself was a well documented and systematized series of steps which were governed by the Government Performance and Results Act. For example, any change to strategic goals not only needed to be cleared by OMB, but also "require[d] that relevant stakeholders be consulted during the strategic plan review" (Brown 2008, p. 9). Thus, in addition to involving multiple levels within OMB, the goal setting process included outside input as well. As a result, even if OMB evaluators did wish to impose special considerations on multiple-purpose regulators, the fact that the goal setting process was open to public scrutiny, much like the agency rulemaking process, likely limited OMB's ability to do so.

A final source of potential bias relates to the possibility that systematic differences exist in how programs were evaluated. If, for example, OMB selected only certain types of programs for evaluation, PART scores may not have accurately reflected overall agency performance. Further, if that selection process is correlated with my procedure for categorizing agencies as multiple-purpose regulators, the resulting test will not only be inaccurate, it will be biased. However, as described above, virtually all government programs were evaluated through PART, mitigating this concern. Even so, a related version of this problem would emerge if OMB

evaluated regulatory and non-regulatory programs differently. This might be the case if any important differences in how the functions are executed impacted how the scores were calculated. If, for example, regulatory programs performed worse than non-regulatory programs simply because it is more difficult to describe regulatory outcomes, one might be concerned that the relatively poor performance of multiple-purpose regulators is driven by the presence of a regulatory function at these agencies. However, although some differences existed in the wording of the underlying questions used to rate performance in order to make them applicable to that particular program type (Brown 2008, Office of Management and Budget 2003), the pattern of results described below do not support the hypothesis that regulatory programs were evaluated differently. Multiple-purpose regulatory agencies score worse than both non-regulators and regulators that do not mix non-regulatory functions. Furthermore, no systematic differences exist within multiple-purpose agencies in terms of performance on regulatory and non-regulatory programs.

Thus, although PART scores might not be a perfect measure of relative agency performance, they do not exhibit obvious biases that would cause the variation in them to be systematically correlated with multiple-purpose regulators for reasons unrelated to the actual performance of these agencies in attaining their goals. Further, the interactive process by which they were compiled, coupled with this study's particular focus on the PART results/accountability dimension, present little reason to believe that the scores do not at least approximately correspond to real performance differences between government agencies. Moreover, as described, they do possess several useful attributes. First, they were computed for almost all government programs. Second, they provide a metric which is comparable across agencies.

Third, they were subject to various levels of review inside and outside of OMB, making them less subject to ad hoc manipulation.

Database Preparation

In addition to OMB PART scores, I used two other sources of data for the analyses in this and the next chapter. Surveys conducted by Joshua Clinton and David Lewis (2007) were adapted to produce a measure of agency political preferences. The surveys asked a group of academics, journalists, and think tank members to rate the policy views of departments and agencies. The information was subsequently assembled by the authors to create a relative scale of agency preferences from most conservative—a score of 2.4 for the Navy—to most liberal—a score of -2.07 for Action. I used the scale as an explanatory variable to capture potential political bias associated with OMB assessments of agency performance as described above.

OPM's Federal Human Capital Survey (FHCS) provided a final source of data for the cross-sectional analyses. Although the data from this survey are mainly used in the next chapter, its structure affected the design of the database used in this chapter as well. As a result, I discuss the survey briefly here. FHCS, first conducted in 2002 and administered every two years thereafter, asks a wide range of questions associated with federal employee satisfaction. Although OPM publishes the summarized results, it also makes the micro data available which, among other things, identifies the government agency associated with each survey responder. In preparing the data for publication, OPM statisticians compute weights for individual respondents to reflect the extent to which each individual is representative of the federal workforce as a whole (U.S. Office of Personnel Management 2010). The purpose of the weights is to facilitate data aggregation by mitigating respondent bias in the data which would occur if the distribution

of survey respondents did not reflect the distribution of federal government personnel overall. However, because weights were not computed for 2002 and 2004, OPM recommended focusing on the 2006 and 2008 results (Miller 2010), a suggestion which I follow in the presentation that follows.

To compile the working database, I first determined the agency associated with each OMB graded PART program. OMB sometimes listed the agency in the PART worksheet, but often program ownership was categorized only at the departmental level. For example, although OMB designated the Cochran Fellowship Program as a Department of Agriculture program, the program is actually run by the Foreign Agricultural Service within the Department of Agriculture. Searches were conducted to identify the agency associated with each program using the internet program links when available as well as general web searches of departmental and agency websites. The associated level of disaggregation of the FHCS data also played prominently in assigning programs to agencies. Although OPM's FHCS instrument designates the agency to which the survey respondent belongs and, thus, provides a good source to identify government agencies, OPM allows departments to decide to what extent they want survey data to be reported at the agency level. As a result, some variation exists in the number of agencies within a department that individually report their results. For example, although the Department of Agriculture has 13 and the Department of Justice has 11 agencies identified in the FHCS, the Department of Energy and the Department of Veterans Affairs each have four agencies in the working database.

In order to develop a single PART score for each agency, historic OMB data and published materials were used to create a database of 1,062 OMB reviewed programs as well as to track changes in results scores over time. Using this information, a single results/accountability score

for each program was then generated by preparing an average score for those years in which OMB maintained a record for the program. The average was computed by weighting each year's score by the program's real funding in that same year in millions of 2005 dollars. These average scores were then used to generate composite scores for each agency by weighting each associated program's average score by its real funding. As described below in Table 2-1—which summarizes the data for the study—the resulting mean agency PART score on a possible 0 to 100 point scale was 54.55 and ranged from 2.50 to 93.25.

By using the aforementioned program type field which was populated for each program by the associated agency in conjunction with OMB, the PART database was also employed to identify agencies that combined regulatory and non-regulatory functions. An agency which had at least one regulatory program and at least one associated with another category was classified as a multiple-purpose regulator. Correspondingly, agencies with no regulatory program and those with only regulatory programs were not coded as multiple-purpose regulators. Because of the noted role that departments played in determining the degree of disaggregation reported in the raw FHCS data, three observations in the database could not definitively be assigned to a particular multiple-purpose regulator within the associated department. While these observations were still included in the final dataset for completeness because they combined regulatory and non-regulatory programs, in associated robustness tests I found that their exclusion did not affect the character of the statistical tests or regression models.

In addition to its convenience, the mechanism described for identifying multiple-purpose regulators also accords well with the general approach I use in this study to distinguish multiple-purpose regulators from those that only regulate. In particular, I only consider an agency to be a multiple-purpose regulator if that agency maintains a function which is regulatory in nature as

well as another major function which is not and which supports a purpose separate of the regulatory function. In no regulatory agency will everyone—or even close to everyone—have as their primary function to specifically write or enforce rules. However, if those civil servants who do not directly perform the regulatory tasks support those functions through, for example, administrative support, the associated agency was not deemed to be a multiple-purpose regulator. It was only when at least some of those other personnel work to achieve a goal that is wholly separate of the regulatory charge that I treated that regulator a multiple-purpose regulator. By rating performance by program within agencies, the PART database greatly reduced the imprecision associated with identifying agencies which truly have a separate purpose beyond regulating and those in which non-regulatory tasks support regulatory functions. A regulator which also has a program that is categorized as non-regulatory is rightly considered multiple-purpose because that program signifies a separate purpose with its own non-regulatory goals. In other words, if categorized as non-regulatory, the tasks and functions associated with that particular program will not—by definition—be supporting regulatory goals.

Table 2-1 below summarizes mean PART performance for non-regulators, regulators, and multiple-purpose regulators. In addition, for multiple-purpose regulators specifically, the table reports agency performance on regulatory programs and non-regulatory programs separately. To conduct additional statistical tests, the percentage of agency funding dedicated to regulatory programs was also computed for each multiple-purpose regulatory agency. In the 32 out of 1,062 total programs that combined regulatory and non-regulatory elements in the program itself, to compute the agency percentage, half of that program's funding was assumed to be associated with the regulatory portion while the other half was assumed to be associated with the non-regulatory portion. Finally, a measure of agency funding was prepared by summing program

funding in millions of 2005 dollars for each agency over the span of the PART database and taking the natural log of the resulting amount. Summary statistics for these variables are also provided in Table 2-1.

Table 2-1 – Descriptions and Summary Statistics for Variables Used in Analyses in Chapters 2 and 3

Description	Type	Obs.	Mean	Std. Dev.	Min	Max
Agency's weighted average of OMB PART program results/accountability scores which rate program performance on goals	All Agencies	144	54.55	20.19	2.50	93.25
	Non-Regulatory	95	56.20	20.26	8.25	91.06
	Regulatory	11	63.30	20.23	40.00	93.25
	Multiple-Purpose	38	47.90	18.62	2.50	86.80
Weighted PART scores by program type for multiple-purpose regulatory agencies only	Regulatory	38	49.00	23.30	4.02	91.75
	Non-Regulatory	38	48.23	19.81	0.63	86.80
Multiple-purpose regulator (coded as 1) reflects agency that operates at least one regulatory and one non-regulatory program	All Agencies	144	0.264	0.442	0.000	1.000
Portion of total agency funding dedicated to regulatory programs	All Agencies	144	0.128	0.282	0.000	1.000
Agency funding determined by summing average program funding for each agency and taking the natural log	All Agencies	144	7.370	2.184	2.072	13.252
Clinton and Lewis measure of agency political preferences from liberal to conservative based on expert surveys	All Agencies	141	0.054	1.000	-2.010	2.400
Response bias corrected portion of agency employees that strongly agree that they know how their work relates to agency's goals and priorities	All Agencies	144	0.314	0.071	0.199	0.669
	Non-Regulatory	95	0.323	0.079	0.199	0.669
	Regulatory	11	0.319	0.058	0.259	0.454
	Multiple-Purpose	38	0.291	0.042	0.202	0.397

Notes: Data derived from Office of Management and Budget's (OMB) Program Assessment Rating Tool (PART) scores from 2002 through 2008 as well as Office of Personnel Management's (OPM) Federal Human Capital Survey (FHCS) responses from 2006 and 2008. Clinton and Lewis measure includes three less observations because agency political preferences derived from this source were not available for three agencies in the database. Multiple-Purpose type refers to agencies that combine regulatory and non-regulatory programs.

Finally, as mentioned above, the analysis in Chapter 3 also uses OPM's FHCS data for 2006 and 2008. The data were used to assess the degree to which goal ambiguity plays a role in explaining relative multiple-purpose regulatory agency performance. The primary question of interest chosen for the examination asked respondents to evaluate the statement, "I know how my work relates to the agency's goals and priorities" (U.S. Office of Personnel Management 2006, 2008). Respondents were presented with a six point scale: strongly agree, agree, neither

agree or disagree, disagree, strongly disagree, and do not know. The aforementioned OPM generated statistical weights were then combined with the respondent answers to ascertain the percentage of personnel in each agency—corrected for response bias—that strongly agreed with the statement of interest. A simple average for 2006 and 2008 was then computed to generate the final value for each agency. As Table 2-1 indicates, the mean percentage of agency personnel who strongly agreed that they knew how their work related to the agency’s goals and priorities was 31.4% and ranged from 19.9% to 66.9%. The process of combining the OMB and OPM data sources resulted in a final dataset of 144 agencies.

Measuring Relative Goal Attainment

Both Table 2-1 above and Table 2-2 below provide initial evidence for the chapter’s primary finding—that multiple-purpose regulatory agencies exhibit relatively inferior performance as measured by the extent to which they achieve their organizational goals. As the three rows from Table 2-1 which present summary statistics on OMB measured performance for non-regulators, regulators, and multiple-purpose regulators suggest, regulatory agencies that also engage in non-regulatory functions do worse regardless of whether the comparison set is non-regulatory agencies or agencies that only regulate. The significance of these differences is demonstrated in Table 2-2 through a simple difference in means test. Given the relatively small sample of agencies that only regulate, the table displays the difference in results scores for multiple-purpose regulators relative to those that do not mix regulatory and non-regulatory functions. As the test shows, the null hypothesis that the two groups perform equally well according to OMB assessments of goal attainment is solidly rejected regardless of whether the alternative hypothesis

is that performance is not equal for the two groups or that agencies which do not mix functions perform better. The test's p-value is 0.0173 in the first case and 0.0087 in the second.

Table 2-2 – Difference in Means Test Assessing Relative Multiple-Purpose Regulatory Performance on Goal Attainment

Group	Obs.	Mean Score	Standard Error	Statistic
Regulatory Only or Non-Regulatory (Non-Mixed)	106	56.94	1.97	
Multiple-Purpose	38	47.90	3.02	
Combined	144	54.55	1.68	
Difference Between Non-Mixed & Multiple-Purpose		9.04	3.75	
t-statistic				2.4081
p-value for H_a : Non-Mixed \neq Multiple-Purpose				0.0173
p-value for H_a : Non-Mixed $>$ Multiple-Purpose				0.0087

Notes: Mean score for regulatory only or non-regulatory agencies represents average agency PART score for those agencies that either only implement regulatory programs or only implement non-regulatory programs. Mean score for multiple-purpose agencies represents average agency PART score for those agencies that engage in both regulatory and non-regulatory programs. Each agency PART score is computed as weighted sum of all agency program results/accountability PART scores.

Of course, Tables 2-1 and 2-2 do not control for other factors which might be driving the difference in goal attainment in the two groups. As a result, Table 2-3 below displays three sets of regression results which measure the effects of combining regulatory and non-regulatory functions after controlling for various other factors. The basic specification for the regressions is $p = m\mu + d\delta + \varepsilon$, where p is a vector of observations on agency composite goal performance as measured by agency average PART results/accountability scores, d is a matrix of agency demographics, and m is a matrix that includes variables that measure the extent to which the agency mixes regulatory and non-regulatory functions.

In the first two specifications in Table 2-3, m is a dummy variable which is recorded as one if the agency combines regulatory and non-regulatory functions. In the third, m instead is represented by the percentage of the budget dedicated to regulatory programs as well as that percentage squared. Further, for the first and third columns, the described Clinton and Lewis measure of agency political preferences and the natural logarithm of agency funding are included

to account for agency demographics (*d*). In the second specification, agency funding is instead accompanied by executive departmental level indicator variables, including dummies for the Environmental Protection Agency and the General Services Administration. Unfortunately, the Clinton and Lewis measure was only compiled at the broad agency or departmental level. Although, for example, it measures political preferences for the Department of Labor as a whole, the variable does not estimate preferences at the sub-departmental level for agencies such as the Employee Benefits Security Administration and the Mine Safety and Health Administration. As a result, agency political preferences and departmental dummies are not both included in the same regression.

Table 2-3 – Regressions of Agency Goal Performance on the Presence of Regulatory and Non-Regulatory Functions at that Agency

Variable	Specification 1	Specification 2	Specification 3
Multiple-Purpose Regulator Dummy	-9.4951*** (3.6218)	-9.4942** (4.1378)	---
Portion of Funding to Regulatory Programs	---	---	-39.2779* (23.0330)
(Portion of Funding to Regulatory Programs) ²	---	---	50.7544** (24.1183)
Agency Political Preferences	5.2339*** (1.6219)	---	5.5545*** (1.6401)
ln(Total Agency Funding)	0.1891 (0.7445)	-1.0207 (1.1426)	0.2681 (0.7720)
Constant	55.4969*** (5.7949)	57.2058*** (16.6960)	52.5023*** (6.2113)
Departmental Dummies?	No	Yes	No
Observations	141	144	141
F-statistic (<i>d</i> ₁ , <i>d</i> ₂)	5.76 (3,137)	2.08 (51,92)	4.09 (4,136)
R-squared	0.112	0.535	0.107
Adjusted R-squared	0.093	0.277	0.081

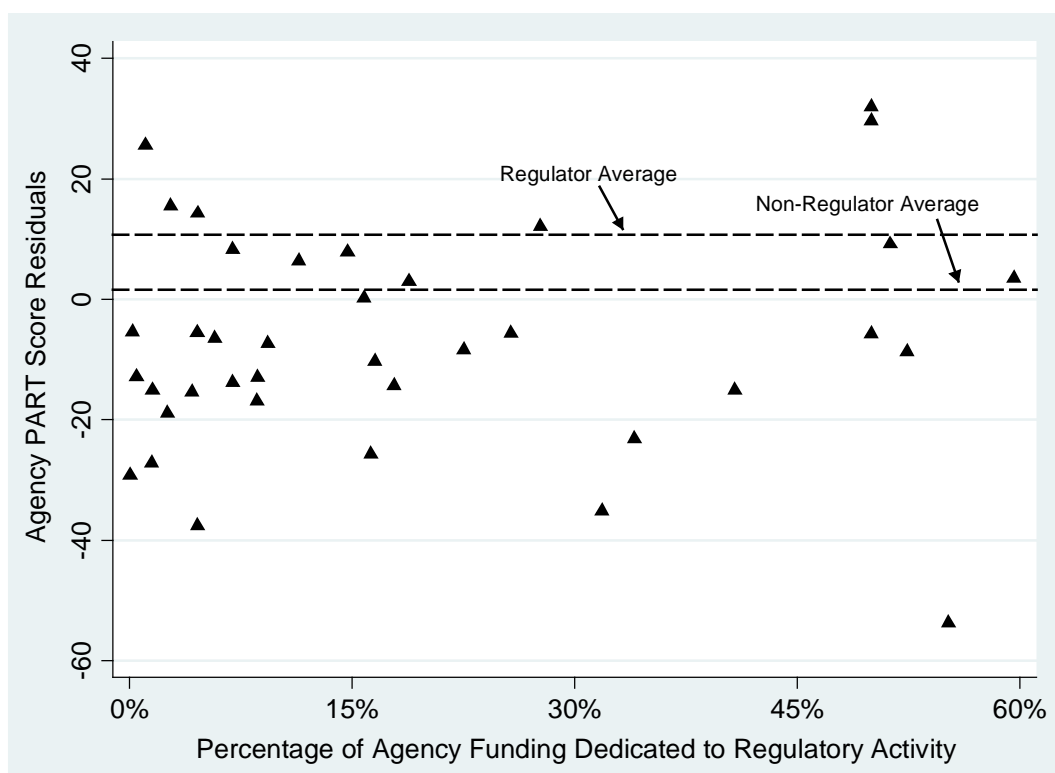
Notes: Dependent variable is Agency OMB PART Score as described in Table 2-1. Standard errors are in parentheses. Tests of significance are tests of difference from zero. Significance levels: *** implies $p < 0.01$; ** implies $p < 0.05$; * implies $p < 0.10$. First and third regressions include three less observations because Agency Political Preferences derived from Clinton and Lewis measure are not available for three agencies in OMB PART dataset.

While it was operating the PART program, in any given year, OMB both updated evaluations for some programs that it had rated previously and performed initial evaluations for other programs. Thus, the agency score in a particular year is not independent of the previous year, which precludes incorporating temporal variation to measure changes in agency goal attainment. Even so, at least in specification two, the effect of combining regulatory and non-regulatory tasks in a single agency is measured holding differences in departmental characteristics constant. The regression results therefore describe the effects of combining regulatory and non-regulatory functions on goal performance between agencies within departments. Stated differently, through this procedure, I am able to control for effects on agency performance that may arise from differences in departmental characteristics including the quality of senior leadership, policy focus, and interest group involvement that distinguish, for example, the Department of Education from the Department of the Treasury.

Focusing on the results, I note that agency funding is not significant in any specification. This finding is consistent with some recent work in progress on the relationship between agency program budgets and PART performance which shows little association between the two (Thomas & Fumia 2009). Even where evidence using PART data has suggested a positive relationship between performance and budget changes, these effects are tempered when the analysis centers specifically on the results/accountability scores (Gilmour & Lewis 2006a). On the other hand, as specifications one and three suggest, agency political preferences are a statistically significant as well as practically important factor in explaining OMB's assessment of goal attainment in government agencies. In both specifications, the Clinton and Lewis preference measure is significant at the 1% level. Further, a two standard deviation change toward more conservative political preferences—roughly equivalent to the difference between

the Department of Labor and the Department of the Interior—is associated with an 11 point increase in OMB’s assessment of agency performance. Given that the mean agency PART results/accountability score is 54.55, this represents a 20% change for the average agency. As described, these results may not be particularly surprising given that the PART program was created and administered under the administration of George W. Bush (Moynihan 2008). Even so, the size of the conservative bias in performance ratings is rather substantial.

Figure 2-1 – Residual Goal Performance and Percentage of Regulatory Funding for Multiple-Purpose Regulatory Agencies



Notes: PART score residuals were generated by regressing agency OMB results scores measuring agency performance on goals on agency political preferences and total agency program funding. Portion of funding dedicated to regulatory activity was computed by determining total funding to agency regulatory programs relative to all agency programs. For the 32 out of 1,062 programs that combined regulatory and non-regulatory elements, half the funding was assumed to be associated with the regulatory portion and the other half was assumed to be associated with the non-regulatory portion. The horizontal line labeled Regulator Average represents the average residual score for agencies that only regulate. The horizontal line labeled Non-Regulatory Average represents the average residual score for agencies that do not operate a regulatory program.

Shifting focus to the main relationship of interest—the effect of merging non-regulatory and regulatory functions on agency performance—one finds that the explanatory variable is

significant at the 1% and 5% level respectively in the first two specifications. In addition, the magnitude of the negative effect of combining these functions is large. For the average-performing multiple-purpose regulatory agency, the regressions suggest separating non-regulatory and regulatory functions increases measured performance on OMB's scale by 20%. Even so, the results for the third specification—which substitutes for the multiple-purpose dummy the portion of an agency's budget dedicated to regulatory tasks and that measure squared—are somewhat less precise. Although the squared portion of funding targeted to the regulatory function is significant at the 5% level, a Wald test of the hypothesis that the portion of regulatory funding and that portion squared are jointly zero reveals an F-statistic of 3.05 and a p-value of 0.0508, indicating that the variables are together bordering the 5% significance level.

However, this marginal result, which contrasts the clearer evidence in specifications one and two, can be explained by Figure 2-1 above, which presents a graph of the residual OMB results/accountability scores against the percent of funding dedicated to regulatory activities for multiple-purpose regulators. Residual OMB scores were generated by regressing the original scores for goal attainment on total agency program funding and political preferences. Relative to the mean residual performance of agencies that solely regulate or do not regulate at all, the graph confirms Table 2-3 in that the vast majority of multiple-purpose regulators exhibit below average performance for reasons that extend beyond funding or political preferences. However, the graph is also significant because it shows no clear pattern. Since the data do not produce a U-shaped arrangement, the combination of the percentage of regulatory funding and the percentage squared is simply picking up the relatively better performance of the two homogenous agency structures. Given the substantial difference in performance between agencies that do not mix

regulatory and non-regulatory tasks and those that do, this effect is enough to generate a marginally significant joint test despite the absence of a U-shaped pattern in the data.

Examining Possible Explanations

To summarize, OMB's PART data reveal a pattern whereby agencies that are structured to combine regulatory and non-regulatory functions do not perform as well as those that do not combine those functions, as measured by the extent to which they achieve their performance goals. Further, this pattern holds even after controlling for various factors including program funding, agency political preferences, and departmental differences. In this section, I explore some possible reasons why multiple-purpose regulators may perform relatively worse. In particular, I consider whether the divergence can be explained by systematic differences in OMB program evaluations, a broader pattern of lower performance among agencies that combine functions of any kind, or simultaneity bias resulting from the effects of performance on structure.

One potential objection to using PART that I addressed in the data review section related to whether biases existed in how OMB examiners rated regulatory and non-regulatory programs. While that discussion focused on the OMB examiners specifically, some research has asserted that regulatory activities themselves are characterized by inherent difficulties associated with their unique goals to prevent problems and limit harm (Edelman 1967, Noll 1971, Salamon 2002). Because they do not deliver a tangible product, defining goals is thus made more difficult. Moreover, Chun and Rainey have provided evidence, based on their systematic evaluation of mission and goal statements, that regulatory agencies do appear to manage greater ambiguity on those dimensions in particular (2005a). Thus, the challenges for a regulatory

agency in motivating its workforce and measuring performance might simply be greater than at other types of government agencies.

From this perspective, one potential explanation for why multiple-purpose regulators perform worse is that their regulatory programs represent a drag on their overall performance. However, this possibility is not supported by the data. Returning to Table 2-1, although admittedly a small sample, agencies that only engage in regulatory activities actually received higher PART scores on average than those that only engage in non-regulatory activities. In addition, the table also indicates that multiple-purpose regulators themselves display no systematic differences in terms of performance on their regulatory and non-regulatory tasks. In addition to not representing a statistically significant difference, the data reveal that multiple-purpose regulators actually scored almost identical on the two types of tasks (49.00 v. 48.23). Figure 2-1 provides additional descriptive evidence to support these findings. The graph reveals that multiple-purpose regulators that have relatively larger regulatory programs do not perform systematically worse as measured by their overall PART scores. If regulatory performance did weaken an agency's overall score, one should expect to see a downward sloping pattern, reflecting the increasing impact of relatively larger regulatory programs on overall agency performance. In sum, appealing to inherent difficulties associated with administering regulatory functions does not appear to help explain multiple-purpose regulators' performance.

Instead of focusing on the characteristics of the underlying programs, an alternative possibility is that it is the general combination of functions—and not just combinations which include regulatory responsibilities—that elicits inferior performance. It might be that the problems faced by multiple-purpose regulators actually reflect more widespread issues confronted by agencies which combine functions of any type. Table 2-4 below summarizes the

results associated with a test of this hypothesis. The table presents the output from a series of regressions in which agency PART scores were regressed on the natural log of agency funding, departmental indicator variables, and a dummy for agencies which merge the particular function in question with others. In other words, these specifications follow the same format as that in the second column of Table 2-3, except that the multiple-purpose dummy has changed to measure the effects of combining that particular type of function with others. In column one for example, agency PART scores are regressed on agency funding, departmental indicators, and a dummy indicating whether an agency administers at least one block/formula grant program in combination with other programs that do not provide funds through block or formula grants.

Table 2-4 – Regressions of Agency Goal Performance on Various Multiple-Purpose Agencies

Variable	Block/Formula Grant	Capital Assets and Service Acquisition	Competitive Grant	Credit	Direct Federal	Research and Development
Multiple-Purpose Dummy	-7.0706 (4.4882)	5.3996 (4.7776)	-4.4865 (3.8141)	-7.6746 (6.7237)	-11.0262*** (3.9453)	0.7186 (4.4087)
ln(Total Agency Funding)	-0.4862 (1.2006)	-1.3937 (1.2230)	-0.7780 (1.1783)	-0.7536 (1.1830)	0.4493 (1.2381)	-0.9951 (1.1787)
Constant	52.6830*** (20.1578)	54.9631*** (20.1812)	59.6389*** (20.2396)	62.6201*** (20.7344)	55.7920*** (19.4462)	56.9895*** (20.2657)
Observations	144	144	144	144	144	144
R-squared	0.521	0.515	0.516	0.515	0.547	0.509
Adjusted R-squared	0.256	0.247	0.247	0.247	0.296	0.236

Notes: Dependent variable is Agency OMB PART Score as described in Table 2-1. Multiple-Purpose Dummy identifies agencies which combine function indicated in column heading with any other functions. For example, block/formula grant column measures impact on agency PART score of combining block/formula grant programs with other programs. Appendix A provides descriptions of program types. All regressions include departmental indicator variables. Standard errors are in parentheses. Tests of significance are tests of difference from zero. Significance levels: *** implies $p < 0.01$; ** implies $p < 0.05$; * implies $p < 0.10$.

As the results suggest, in all but one case, agencies that combine the particular function in question with others do not perform significantly worse than those that do not. Moreover, in two of the six cases—agencies that mix capital assets and service acquisition programs as well as research and development programs with others—the sign of the relevant coefficient is actually

positive. Even so, given that neither is significant, we cannot draw any conclusions from the positive point estimates except to say that the effects of combining these types of programs with others are not statistically different from zero. Only for direct federal programs in which services are provided directly by Federal Government employees (Brown 2008) does combining programs appear to have an important and significant negative effect on agency performance. Thus, while not solely relegated to regulatory programs, mixing other types of functions does not appear to negatively affect performance in a systematic way. The very fact that multiple-purpose regulatory agencies combine functions therefore does not explain why they perform worse. Moreover, the results suggest that the underlying causal factors which produce the inferior outcomes at multiple-purpose regulators are not necessarily shared by other types of agencies, a conclusion which supports the particular focus on regulators that combine other tasks in recent policy discussions.

A third possible explanation for the empirical evidence demonstrating that multiple-purpose regulators do not perform as well as those that do not combine regulatory and non-regulatory functions centers on the possibility that poor performance drives agency structural decisions rather than the other way around. In fact, based on the reorganizations of the Federal Reserve, MMS, and NISA in response to the associated disasters, it would seem that this source of simultaneity bias would undoubtedly be present here. However, as a practical consideration, the reorganizations associated with these disasters occurred after the end date of the PART dataset. Although OMB did update some PART scores in 2008, the reorganizations associated with the recent disasters did not occur until at least 2010. Thus, their effects would not be captured in the data.

More importantly, breaking up poorly performing regulatory agencies would actually serve to bias the estimate of the effect on performance of merging regulatory and non-regulatory functions toward zero. If Congress, the Executive Office, or the departments themselves ordered the separation of poorly performing regulators that combine other functions, only those performing well would remain in the data. This selection effect would actually bias the results toward finding no effect of combining regulatory and non-regulatory functions. Moreover, if the original agency continued to exist, any improved performance as a result of the separation would increase overall performance of what I label as a multiple-purpose regulator. The process I used to code regulators as multiple-purpose involved determining whether any non-regulatory programs were assigned to that regulator during the entire timeframe of the PART database. The data do not allow me to determine when a program ceased to be within the jurisdiction of the original agency because OMB did not update all program assessments each year. Instead, OMB only reviewed a subset of programs in a given year. Simply because a program was not evaluated therefore does not indicate that the function is no longer being performed by the agency. The result is that if a program was removed from an agency because of perceived poor performance, any overall improvement in the performance of that agency as a result would still be attributed to the former multiple-purpose regulator. This effect would bias the impact of combining regulatory and non-regulatory functions toward zero as well. Thus, to the extent that poor performance did invoke structural changes during the span of the PART program, such actions would attenuate the results, suggesting that the estimates observed represent a lower bound for the actual negative impact on performance of combining regulatory and non-regulatory tasks.

Conclusion

The primary purpose of this chapter has been to explore whether the perceived organizational problems associated with the recent salient failures in regulated industries—including those at the Federal Reserve, MMS, and NISA—are suggestive of a broader pattern among regulators. Using data from OMB’s PART program and incorporating a mix of descriptive statistics, basic statistical tests, and regressions, I show that popular accounts alleging the difficulties hypothesized to beset multiple-purpose regulators are broadly supported by the cross-sectional evidence. In each test, agencies that mixed regulatory and non-regulatory tasks performed worse than those that did not combine such functions. Furthermore, the differences are both statistically significant and numerically important. Controlling for departmental heterogeneity, agency political preferences, and relative funding, the regression estimates indicate that the separation of regulatory and non-regulatory tasks is associated with close to a 10 point rise—equivalent to a 20% increase—in the average multiple-purpose regulator’s performance score.

However, while the analysis supports common perceptions of multiple-purpose regulators, the results simultaneously defy simple explanations. In addition to establishing that the variance in performance is not explained by patterns in how regulatory programs are scored, I also demonstrate that the difficulties in achieving goals displayed by multiple-purpose regulators are not systematically shared by agencies that combine programs more generally. Furthermore, I show that neither biases associated with the PART scores themselves nor those emanating from simultaneity concerns are likely to help us to explain the failure of multiple-purpose regulators to perform as well as those that do not combine regulatory and non-regulatory functions.

In the next chapter, I explore another possible explanation for these findings by connecting them back to the initial discussion in Chapter 1. In particular, I investigate whether goal ambiguity can explain the inferior performance of multiple-purpose regulators. In addition to the related literature which, under the rubric of priority goal ambiguity, has tied the diversity of an agency's goals to its organizational performance (Chun & Rainey 2005a, Drucker 1980, Shalala 1998, Wilson 1989), as we have seen, this argument is also embedded in the criticisms of the Federal Reserve, MMS, and NISA in the wake of the disasters in their respective industries. As predicted by scholars studying reactions to such ambiguity, facing a dilemma of where to focus their attention, critics have alleged that these agencies chose to uphold their respective charges to collect oil and gas revenue, conduct monetary policy, and foster nuclear energy development—to the detriment of fulfilling their regulatory responsibilities.

The purpose of what follows then is to test whether this logic explains why multiple-purpose regulators perform worse. Already in this chapter, I have provided descriptive evidence that appears to contradict this possibility, at least as it relates to agency performance on goals. Multiple-purpose regulators do perform relatively poorly overall, but the deficiencies are shared equally by their regulatory and non-regulatory programs rather than being shouldered specifically by the regulatory function. Furthermore, while the public administration literature has asserted priority goal ambiguity to be a general phenomenon, the evidence here shows the effects on PART performance to be more specifically associated with certain types of combinations. Even so, incorporating the FHCS data compiled by OPM and reviewed above, I present statistical evidence in Chapter 3 which supports a link between goal ambiguity and multiple-purpose regulatory performance. Although the independent effect on performance of combining regulatory and non-regulatory functions remains significant—suggesting additional

inquiry is necessary—I show that employees’ ability to relate to agency goals partially explains the deficiencies in multiple-purpose regulatory performance. While not a complete explanation, this finding nevertheless presents a step in the right direction toward accounting for the inferior performance of multiple-purpose regulators as revealed in this chapter.

Chapter 3

Appealing to Goal Ambiguity to Explain Performance

In a 1951 article examining governmental reorganization in the *Public Administration Review* (PAR), Marshall Dimock, Assistant Secretary of the Department of Labor under President Franklin D. Roosevelt, wrote:

What are the tests of a sound organization? It is one that has a clearly formulated and, of course, a worth-while purpose; one that has enough singleness of purpose so that those who work within the institution are not constantly drawn one way and then another, winding up in frustration. (Dimock 1951, p. 235)

Outlining his six deadly sins of public administration 39 years later in a short piece again in PAR, well-known management scholar Peter Drucker asserted that one “strategy guaranteed to produce non-performance is to try to do several things at once” (1980, p. 103). Some 18 years after Drucker’s article in a 1998 guest editorial in PAR, Donna Shalala, who was then Secretary of the Department of Health and Human Services, declared, “If you try to do everything, you’ll accomplish nothing” (1998, p. 287). Sandwiched between Drucker and Shalala, in his 1989 book *Bureaucracy*, James Q. Wilson wrote that “conglomerate agencies rarely can develop a sense of mission; the cost of trying to do so is that few things are done well” (1989, p. 371).

These quotations—spread over a period of more than 45 years—demonstrate just how entrenched the belief is that entertaining a broad set of organizational priorities is likely to spell disaster for a government agency. Thus, it is not surprising that in the aftermath of the catastrophes detailed in Chapter 1, critics stood ready to blame organizational complexity for the perceived failures of the Federal Reserve, MMS, and NISA to prevent their respective calamities. The accusations placed particular emphasis on the discord that is alleged to have existed between

the regulatory and non-regulatory functions in these agencies, a conflict which management and public administration scholars refer to as priority goal ambiguity (Chun & Rainey 2005a).

Priority goal ambiguity—a type of goal ambiguity defined as the organizational uncertainty that derives from fusing multiple functions in a single agency—can affect performance through several channels. As suggested by the above quotes from Marshall Dimock and James Q. Wilson, diversity of purpose obstructs the development of a sense of mission, reduces efficiency, and spawns organizational confusion. Because of these difficulties, agencies may react to priority ambiguity by developing a pecking order for their assignments (Richards 1986). In the case of the Federal Reserve, MMS, and NISA, regulation was the assignment which was alleged to have occupied a lower rung of this ordering. Nevertheless, as the resulting financial disaster, oil spill, and nuclear meltdown demonstrate, such prioritizing is not ideal given that failures to achieve those policies falling lower on the list are still likely to have important implications for social welfare.

Relating Goal Ambiguity to Performance

Given the long history of public administration scholars and practitioners who have noted the costs of entertaining multiple missions coupled with the evidence acquired from the recent calamities, it seems quite logical to conclude that the difficulties multiple-purpose regulators have in achieving their goals must derive from goal ambiguity. Moreover, with the recent dramatic failures associated with some organizations of this type, it is also quite logical to demand—as many have—that such agencies including MMS and the Federal Reserve be broken up. In fact, this is exactly the consensus opinion of scholars who have examined governmental agencies plagued by these issues more generally (Dixit 2002, Wilson 1989).

In this chapter, I directly test the proposition that the relative poor performance of multiple-purpose regulators is a function of goal ambiguity. Armed with the evidence from Chapter 2 that multiple-purpose regulators are less apt to achieve their goals relative to other agencies, I ask whether this finding can be explained by applying the logic of goal ambiguity. Do multiple-purpose regulators perform worse because such arrangements generate the problems identified in the literature more broadly including uncertainty, confusion, and neglect in these agencies? Although this statistical analysis focuses on the broad database of 144 agencies described in Chapter 2, the results are also important for evaluating the truthfulness of the claims that regulatory neglect borne from goal conflict led to the massive failures in the financial, oil and gas, and nuclear energy industries. In fact, as we will see, the findings here will serve to orient the in-depth investigation into the role of MMS's organizational design in precipitating the Gulf oil spill which follows in Chapters 4 and 5.

In addition to using the data to shed light on the primary question of whether ambiguity can explain inferior multiple-purpose regulator performance, the results in this chapter provide additional evidence to support the tradition of theoretical but more limited empirical research on the effects of ambiguity on organizational performance. The OPM administered Federal Human Capital Survey (FHCS) presents a previously unused source of data to investigate goal ambiguity. Employing the OPM data, I am able to study goal ambiguity in a way which departs from the few existing broad based investigations of the phenomenon (Chun & Rainey 2005a, 2005b; Jung & Rainey 2009, 2011). In contrast to other studies in which the authors review individual goals to directly estimate the degree of ambiguity, this analysis uses civil servants' perceptions of how their jobs correspond to agency goals to assess levels of ambiguity in different government organizations. To measure relative ambiguity, I rely primarily on variation

among agencies in how personnel respond to a question asking them to assess the extent to which they understand how their work functions relate to agency goals (U.S. Office of Personnel Management 2006, 2008). In doing so, this chapter incorporates the views of the actual personnel working in these agencies to measure levels of ambiguity instead of appraising ambiguity through the lenses of the researchers themselves.

Exploiting the OPM surveys in conjunction with the PART dataset described in Chapter 2, I first present evidence which establishes a link between goal ambiguity and agency performance. I show that the degree to which agency personnel understand the connection between their tasks and agency goals is positively related to performance on those goals. This finding bolsters the body of research that asserts that clear goals foster better performance. However, in addition to confirming the theoretical literature and validating the limited empirical evidence, these results are important to this study because they provide underlying support for my decision to use the OPM data to study the relationship between goal ambiguity and multiple-purpose regulatory performance.

After examining the connection between ambiguity and performance, I shift focus to the core question of interest and consider whether goal ambiguity can help explain why multiple-purpose regulators perform worse. Those agencies which combine regulatory and non-regulatory tasks also tend to be the same ones in which employees are less apt to know how their jobs affect agency goals and priorities, a finding I derive through a combination of descriptive and statistical evidence. Not only is this association supported through simple statistical tests, but it is also borne out in the observed patterns in the regression coefficients when indicators of goal ambiguity and multiple purposes are each included in the models. Overall, the cross-sectional results support both those theories that emphasize the negative correlation between

ambiguity and organizational performance as well as the many commentators on the recent regulatory failures who emphasize the role of multiple agency purposes in encouraging regulatory weakness.

However, in the end, this research also reveals that the extent to which personnel in multiple-purpose regulatory agencies relate to agency goals is by itself not sufficient to explain the relatively poor performance of these regulators. In fact, even after controlling for goal ambiguity using FHCS, I demonstrate that multiple-purpose regulators still exhibit substantially and significantly worse performance. Thus, it is not simply that goal ambiguity and conflict are not able to fully explain why multiple-purpose regulators are less likely to achieve their goals. Rather, even holding the effect of relative goal ambiguity constant, such agencies are associated with statistically and numerically significant lower levels of goal performance. These results suggest that although the relationship between multiple-purpose regulators and goal attainment is partially explained by appealing to the degree to which employees can connect their tasks to agency goals, this is not the whole story. The research in this chapter thus provides a clear signal that our existing understanding—emanating from the goal ambiguity literature—for why multiple-purpose regulators perform relatively poorly is missing important features.

Finding Priority Ambiguity in Government Organizations

The fact that private firms often need to manage multiple and competing goals is well known in the organizational theory literature (see, e.g., Cyert & March 1963). Yet, the belief that priority goal ambiguity is generally more pronounced among government agencies is one that is shared widely among scholars from a variety of disciplines (Biber 2009, Dixit 2002, Wilson 1989). In part, this derives from the absence of the profit motive that drives most firms

and limits the possible goals that such institutions might otherwise pursue (Kelman 2005, Tirole 1994). Government organizations are often called to supply products and services because society has decided that private markets will not achieve the optimal provision of the goods through adjustments in prices (Stiglitz 2009, Yao 1988, 2003). As a result, an inability to rely on profit to instill organizational discipline is likely to be an issue when government intercedes in almost any sector of the economy.

This aspect of public organization is generally thought to make the well-functioning of such enterprises more difficult to achieve (Dixit 2002, Rainey 2009, Tirole 1994). From the perspective of politicians that oversee agency actions, there are many possible reasons why these principals may want to limit the number of even closely related goals entertained by a particular agency. For example, to the extent task division creates some level of redundancy among agencies, splitting functions may insulate politicians from losses even when one of the associated agencies fails to perform its assignment (Bendor 1985, Landau 1969). Separating functions can also increase transparency and limit the extent to which an agency can deliberately choose actions which diverge from congressional or presidential preferences (Ting 2002).

Focusing on the operations of the agencies themselves, there appear to be few reasons to believe priority goal ambiguity can do anything but harm organizational performance (Chun & Rainey 2005a). Further, when the functions in question actually conflict with each other, the problems can worsen (Rainey 2009). Perhaps the most widely cited mechanism by which priority goal ambiguity impedes performance is through its role in increasing organizational complexity (Lee et al. 1989). Although straightforward in principle, this conduit can operate through several channels. Within the organization, complexity can increase organizational costs because it forces employees to devote more resources to determining what they are supposed to

be doing (Steers & Porter 1974). To overcome the confusion that is created by priority ambiguity, civil servants may have to rely on trial and error to work toward a more coherent understanding of their roles in the agency. Alternatively, where such ambiguity allows for differing interpretations of the aims of the organization, its presence can lead to greater efforts inside the agency to influence its priorities. Of course, such politicking is a drag on organizational performance as well (Milgrom & Roberts 1988).

Complexity driven by goal ambiguity can further reduce civil servants' abilities to connect their jobs with actual performance, an effect which has been shown to reduce intrinsic work motivation (Locke & Latham 1990). Similarly, to the extent that employees signal their abilities to their own employer as well as others through their performance on a given task, adding functions also weakens the link between outcomes and a hiring market's ability to separate the individual's talent from chance in driving outcomes (Holmstrom & Milgrom 1991). Because the market's opinion of the employee is then less impacted by that employee's work, priority ambiguity can reduce an employee's incentive to expend effort as it is not as likely to be rewarded (Dewatripont et al. 1999). Thus, whether the cause emanates from within the individual or affects the individual through external market signals, the end result is lower employee effort.

Priority goal ambiguity has consequences that originate at the organization level as well (Wright 2004). Certainly, diminished employee effort, if widely shared, can negatively impact overall agency performance. However, juggling multiple and possibly conflicting functions can simultaneously impede the development of a common sense of purpose more broadly at the agency (Wilson 1989). Rather than first affecting the individual and then the organization as a whole, an organization with an incoherent mission is unable to foster a consistent set of actions

among its employees. When faced with a new situation, goal ambiguity makes it difficult for a civil servant to instinctively recognize the right course of action. Such was the case with the Immigration and Naturalization Service (INS) which, before it was split up and relocated in the Department of Homeland Security, was asked to balance competing goals including securing the border against illegal immigrants while at the same time facilitating the entry of foreign farm workers. These complexities resulted in low morale among agency staff (Morris 1985). Similarly, when the Social Security Administration was first commissioned to evaluate disability claims, the previously well-functioning agency was nearly torn apart (Derthick 1990). Adding an additional goal undermined the agency's established identity. Employees that had embraced the organization's mission to act as advocates for Social Security beneficiaries were now being asked to evaluate claims, reversing the historically harmonious relationship that existed between the agency personnel and their clients.

Given the vast array of difficulties that priority goal ambiguity generates, it should not surprise us that scholars and practitioners—such as those highlighted in the quotes at the beginning of the chapter—recommend that an organization faced with such ambiguity sharpen its focus (Drucker 1980, Shalala 1998, Wilson 1989). Of course, the straightforward way the agency can do this is by concentrating its attention on a subset of its goals to the detriment of the rest. For example, as Anne Khademian explains, the Federal Deposit Insurance Corporation's (FDIC) focus on one core priority, the solvency of its bank insurance fund, allowed it to successfully update its management practices in the wake of external pressure emanating from the U.S. savings and loan crisis in the late 1980s and early 1990s (1995).

The U.S. Forest Service presents another example of success that appears to have been at least partially driven by its decisions on how to prioritize among competing objectives. Through

the combination of its original congressional mandate and subsequent legislation, the Forest Service is asked to take on several conflicting roles ranging from protecting wildlife to producing timber (Carpenter 2001, Kaufman 1960). However, in implementing these mandates, observers have noted that the Forest Service chose emphasize timber production over the others, reinforcing the bias through its hiring process, formal training, and internal oversight structure (Biber 2009, Kaufman 1960). Given the geographical breadth of the national parks under the Forest Service's jurisdiction, a clear organizational purpose has been especially important in encouraging its isolated forest rangers to make decisions that are consistent with agency aims.

As highlighted in the opening chapter, scholars investigating how politicians assign policy to agencies have shown that the political and procedural complexities associated with the process have important implications for the logic or illogic of the resulting assignments (Mayhew 1974, Mazmanian & Sabatier 1983). Consequently, these assignments have ramifications for the level of ambiguity the agency faces. At the same time, organizational decisions on where to focus attention after competing goals are assigned are also likely to be at least partially determined by political conditions and industry influences. For example, recent empirical research has demonstrated systematic connections between political support as well as issue salience and resulting levels of goal ambiguity (Lee et al. 2009, Stazyk & Goerdel 2010). In fact, in investigating the role of goal conflict on organizational behavior at MMS in Chapters 4 and 5, I will show how changing political and social preferences affected the relative extent to which the agency and the Department of the Interior more generally emphasized regulatory oversight, revenue collection, and support for offshore oil and gas production.

In addition to political and social forces, preferences of managers and agency leaders clearly impact how agencies balance multiple priorities (Carpenter 2001). However, other internal

agency factors may play roles as well. The relative ease with which performance on each task can be measured is one example (Holmstrom & Milgrom 1991). Agency personnel and the organization as a whole will tend to emphasize those functions which are observable, especially when performance determines pay or subsequent job opportunities (Courty & Marschke 2003, Dewatripont et al. 2000). In attempting to maintain control, managers themselves are likely to focus attention on subordinates' tasks which are most easily measured (Wilson 1989, p. 171). Of course, if politicians and the public still regard the other tasks as important—and given that they were likely written into law, this is probably the case—agenda setting by an agency that assigns little importance to a particular task is suboptimal from a policy implementation standpoint. Thus, regardless of whether the agency is able to overcome the direct negative effects of goal ambiguity on performance by narrowing its list of priorities, this response is by no means a solution in the broader sense.

As a result, several possible solutions have been examined to deal with the perceived inadequacies in the performance of multiple-purpose agencies (see Biber 2009 for an in-depth discussion and typology of some of the options). One possibility is to have Congress or the Executive Office directly perform the task by promulgating statutes or issuing presidential directives (Siqueira 2007). However, this mechanism can defeat the purpose of delegating the function in the first place. Even so, the solution is closely related to a very large literature in political science and law that examines how the tools of the executive, legislative, and judicial branches can direct activities of regulatory and other government agencies (see Carrigan & Coglianese 2011 for a review). To the extent that at least one of the three governmental principals values the neglected function, it may have to directly intervene to influence agency priorities.

Another possibility to deal with potentially neglected agency tasks is to assign some level of oversight power to other bureaus that may have an interest in the performance of that function (Biber 2009, DeShazo & Freeman 2005). Agencies that perform this service can be focused on a particular niche as is the case with the Fish and Wildlife Services' role in implementing the Endangered Species Act, but they can also be broad in scope as is exhibited through OMB's oversight of agency rulemaking (Biber 2009). In fact, some have proposed that OMB take a more active role in ferreting out captured relationships among regulatory agencies (Livermore & Revesz forthcoming), perhaps the most extreme version of agency task neglect.

These several options are more geared to resolving a situation where an agency decides to neglect a subset of its functions relative to attempting to juggle them all. Perhaps this is why the most common remedy proposed by social scientists when agencies are saddled with too many and possibly conflicting mandates is to split the organization into multiple entities (Dewatripont et al. 1999, Dixit 2002, Ting 2002, Wilson 1989). In addition to representing the consensus recommendation in the wake of the Gulf oil spill, the Japanese nuclear disaster, and—to a lesser extent—the financial crisis, the previously described difficulties of INS presents yet another recent example where carving up the agency was chosen as a solution to remedy conflicted organizational purposes (Manns 2002). Reorganization is sometimes viewed critically as an ineffectual method to solve the problems of governmental administration (Kettl & DiIulio 1995, Wilson 1989, p. 264-268). Nevertheless, breaking up an agency saddled with competing priorities does offer a strategy that is equipped to deal with many of the complications that flow from situating multiple tasks in one organization. Not only does separating the agency into multiple parts facilitate development of a single purpose and minimize complexity, but it does not do so at the expense of the subversion of other tasks. Further, it can sharpen the market's

ability to measure agency performance, encouraging greater civil servant effort as a result (Dewatripont et al. 1999). Finally, subdividing the conflicted agency can simplify oversight as well (Ting 2002).

Goal Ambiguity Measured through the FHCS

As the last section has highlighted, our conceptual understanding of goal ambiguity in general—and priority goal ambiguity in particular—is fairly developed. Yet, the vast majority of empirical evidence is based on studies of agencies such as the Forest Service, FDIC, and INS. Nevertheless, the growth of the goal ambiguity literature has prompted some recent efforts to broaden the empirical focus. In a set of published and unpublished studies, Hal Rainey and several co-authors review goals of a broad set of agencies to directly judge to degree to which they exhibit ambiguity (Chun & Rainey 2005a, 2005b; Jung & Rainey 2009, 2011; Lee et al. 2009). For example, associated with their two 2005 studies, Chun and Rainey use plans and reports submitted by agencies to Congress in response to the Government Performance and Results Act of 1993 to generate various measures of goal ambiguity through their reviews of these documents (2005a, 2005b). Similarly, in their 2009 working paper, Jung and Rainey examine PART program goals to develop measures of goal ambiguity at the agency program level (2009).

This study uses a different approach to generate a measure of goal ambiguity. As reviewed briefly in the last chapter, I rely on participant responses to the 2006 and 2008 Federal Human Capital Surveys (FHCS). FHCS is administered by OPM every two years and includes a broad cross section of U.S. federal government employees. For example, the 2008 survey included “approximately 97 percent of the executive branch workforce” and 54 independent agencies

(U.S. Office of Personnel Management 2008, p. 36). Approximately 51 percent of the roughly 417,000 employees who received the survey completed it, resulting in 212,223 completed surveys (U.S. Office of Personnel Management 2008, p. 37). Likewise, in 2006, 221,479 completed surveys were received with a response rate of approximately 57 percent (U.S. Office of Personnel Management 2006, p. 35). Importantly, as described, the released data contain weights to account for varying levels of responsiveness among types of agency personnel. Therefore, the user can aggregate the results to accurately reflect the views of the government workforce as a whole and allow for comparisons among agencies (Miller 2010, U.S. Office of Personnel Management 2006, 2008).

Although the surveys ask a broad array of questions, for purposes of this analysis, I focus on participant responses to the statement, “I know how my work relates to the agency’s goals and priorities” (U.S. Office of Personnel Management 2006, 2008). To form my measure of goal clarity, I determine the respondent adjusted percentage of agency employees that strongly agreed with the statement and take the simple mean of this percentage for 2006 and 2008. For the six agencies which appeared in one of the surveys but not the other, I simply use the results from the year in which the agency participated to form my estimate of goal clarity. Of course, although I describe the measure in terms of goal clarity, it is equally correct to refer to it as a measure of goal ambiguity since clarity and ambiguity present two sides of the same coin. The higher the percentage of employees that strongly relate to agency goals, the lower is ambiguity, and the higher is clarity. As they refer to the same concept, throughout the rest of the chapter, I use the terms clarity and ambiguity interchangeably.

As suggested at the outset, concentrating on the impressions of agency employees offers the advantage of measuring ambiguity where it matters—in the agency personnel themselves. Goal

ambiguity is important because it affects worker behavior. Regardless of whether well-intentioned third parties decide that a goal is ambiguous, a proxy using this methodology measures ambiguity to the extent these assessments coincide with the views of agency personnel. Thus, assessing ambiguity using the survey responses of agency personnel offers the advantage of more closely connecting the measure to the relevant population through which ambiguity affects performance.

However, the reasons that OPM's survey represents a useful data source extend beyond the particular question chosen for this study. The survey's large sample size both in terms of the number of respondents as well as the number of agencies allows for robust statistical analyses. Furthermore, as it is conducted by OPM and not OMB, administration of the surveys is not connected to the development of PART scores. For this reason, program administrator impressions are unlikely to drive the relationship between performance on goals and goal ambiguity, thereby eliminating one potential source of bias. If instead the programs were both overseen by one agency, one might worry that the survey results could affect subsequent performance assessments by these same individuals. In addition to this not being the case here, the FHCS panels actually used—namely 2006 and 2008—coincide chronologically with the publication of the majority of PART scores, further limiting the possibility that a relationship between ambiguity and performance exists for reasons unrelated to ambiguity's impact on agency behavior. Yet, while not originating from the same source, the two measures are still closely linked since both connect directly to agency goals. PART scores measure agency performance on goals while the FHCS results provide data which can be aggregated to ascertain agency personnel clarity on those same goals.

At the same time this measure of ambiguity has many attractive features, the OPM surveys come with limitations as well. The first is simply that the data are generated from surveys and, thus, are subject to the typical caveats associated with such sources. Even so, it is difficult to envision how one might estimate goal ambiguity using a revealed preference measure instead. Certainly, studies in which researchers assess the degree of ambiguity by analyzing goals directly do not provide such a measure.

Perhaps a more precise critique of the indicator of goal ambiguity used in this study is not that it is generated from surveys but rather that it contains measurement error. Unlike when it resides in the dependent variable, measurement error in an independent variable can impact the estimate of that variable's coefficient as well as others. When the error is correlated with the observed measure of the independent variable, the estimate of the coefficient will tend to be biased even in large samples (Wooldridge 2002, p. 74). For example, if employees are simply ignorant of their agency's goals for reasons unrelated to goal ambiguity, errors-in-variables bias can result if that ignorance is correlated with the measure of ambiguity used. While measurement error is likely to exist in almost any analysis using survey data, the concern is important to consider in assessing the statistical results generated in this chapter. As a result, following the presentation of the findings, I engage in an in-depth discussion and a series of robustness checks to assess the extent to which errors-in-variables bias might impact the analysis. The examination confirms that while accurately measuring goal ambiguity is of central importance in drawing specific inferences from the empirical results, any bias—if it exists at all—is unlikely to effect the conclusions derived from the descriptive analysis or the regressions.

Measuring the Association between Ambiguity and Performance

The discussion in the previous section has revealed that while perhaps no measure is perfect, using OPM's FHCS data to measure agency ambiguity presents several advantages, the most important of which is that the source incorporates input from agency personnel. Moreover, as I suggest above, unlike some survey data, the measurement error associated with operationalizing the question, where testable, reveals little cause for concern. In this section, I use this indicator—the percent of agency personnel that strongly agree that they know how their work relates to agency goals and priorities—to determine whether ambiguity can explain the relationship between combining regulatory and non-regulatory functions and agency performance revealed in Chapter 2. Because I am attempting to explain these results, the structure of the analysis retains many of the features of that chapter. In fact, as we will see, in two of the primary statistical tests of the hypothesis that goal ambiguity is the conduit joining multiple-purpose regulators and their performance, I simply add the FHCS measure to the models from Chapter 2. Thus, for convenience, Table 3-1 below reproduces Table 2-1 which presented the descriptive statistics for the variables used in both chapters.

The primary goal of the analysis in this section is to ascertain whether the inability of multiple-purpose regulators to achieve their goals can be explained by the degree to which their personnel know how their work relates to those goals. However, to untangle the multi-faceted relationship, I first present some descriptive evidence to show how goal ambiguity interacts with goal performance and to test whether agencies which combine regulatory and non-regulatory tasks exhibit greater goal ambiguity.

Table 3-1 – Descriptions and Summary Statistics for Variables Used in Analyses in Chapters 2 and 3

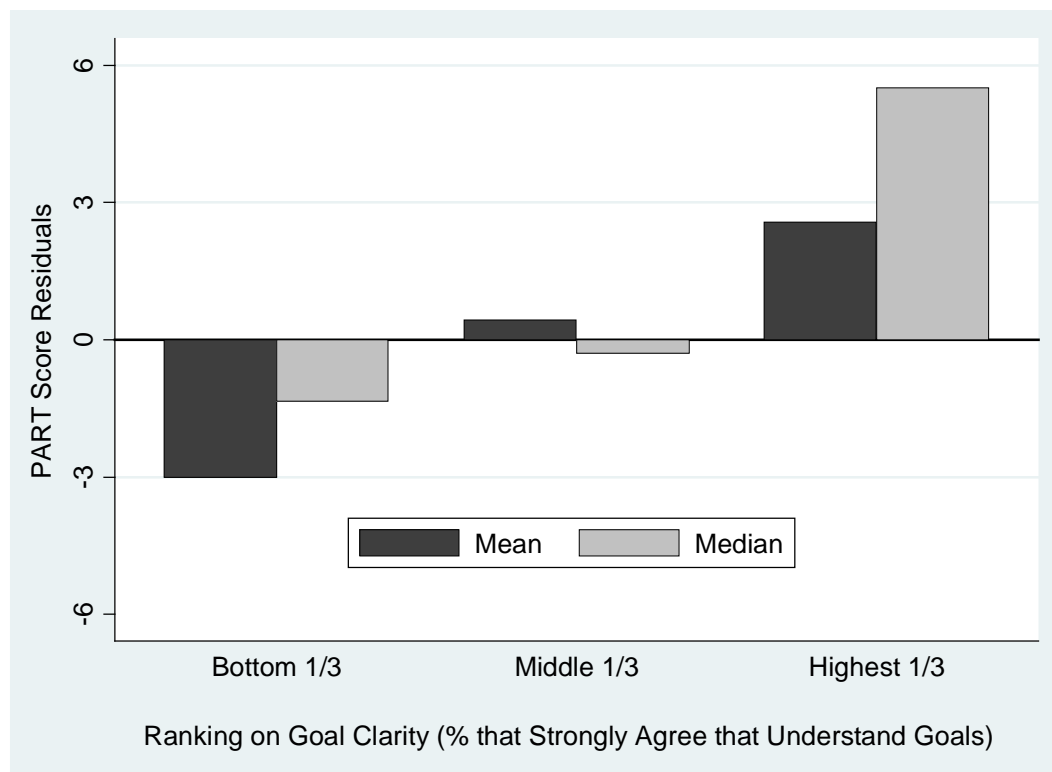
Description	Type	Obs.	Mean	Std. Dev.	Min	Max
Agency's weighted average of OMB PART program results/accountability scores which rate program performance on goals	All Agencies	144	54.55	20.19	2.50	93.25
	Non-Regulatory	95	56.20	20.26	8.25	91.06
	Regulatory	11	63.30	20.23	40.00	93.25
	Multiple-Purpose	38	47.90	18.62	2.50	86.80
Weighted PART scores by program type for multiple-purpose regulatory agencies only	Regulatory	38	49.00	23.30	4.02	91.75
	Non-Regulatory	38	48.23	19.81	0.63	86.80
Multiple-purpose regulator (coded as 1) reflects agency that operates at least one regulatory and one non-regulatory program	All Agencies	144	0.264	0.442	0.000	1.000
Portion of total agency funding dedicated to regulatory programs	All Agencies	144	0.128	0.282	0.000	1.000
Agency funding determined by summing average program funding for each agency and taking the natural log	All Agencies	144	7.370	2.184	2.072	13.252
Clinton and Lewis measure of agency political preferences from liberal to conservative based on expert surveys	All Agencies	141	0.054	1.000	-2.010	2.400
Response bias corrected portion of agency employees that strongly agree that they know how their work relates to agency's goals and priorities	All Agencies	144	0.314	0.071	0.199	0.669
	Non-Regulatory	95	0.323	0.079	0.199	0.669
	Regulatory	11	0.319	0.058	0.259	0.454
	Multiple-Purpose	38	0.291	0.042	0.202	0.397

Notes: Data derived from Office of Management and Budget's (OMB) Program Assessment Rating Tool (PART) scores from 2002 through 2008 as well as Office of Personnel Management's (OPM) Federal Human Capital Survey (FHCS) responses from 2006 and 2008. Clinton and Lewis measure includes three less observations because agency political preferences derived from this source were not available for three agencies in the database. Multiple-Purpose type refers to agencies that combine regulatory and non-regulatory programs.

Given the findings of the literature on agency goal setting, one might expect that a better understanding among agency personnel for how their tasks relate to agency goals should lead to better performance on those goals. And in fact, the data support this hypothesis. Figure 3-1 below shows a bar chart of mean and median agency performance on goals—controlling for funding and political preferences—for three groups of agencies based on the relative percentage of agency personnel that strongly agree that they know how their work relates to goals. The groupings represent the lower third, middle third, and upper third of agencies measured by that percentage. Average or median agency performance is determined using the residuals from a regression of PART scores on the natural log of total agency funding and political preferences

using the Clinton and Lewis scale. Thus, the measure of performance controls for agency differences in political orientation and budgets to further isolate the relationship between goal attainment and goal clarity. The chart demonstrates that those agencies in which agency personnel connect their work to organization goals are the same agencies which perform better on those goals. At the same time, those agencies in which personnel believe little connection exists between their functions and goals are also organizations which are less apt to achieve their goals. When I review the regression results in Table 3-3 below, I will demonstrate that this connection is confirmed through more formal statistical analyses. Still, Figure 3-1 conveys the essential insight that goal clarity and goal performance move in tandem.

Figure 3-1 – Residual Goal Performance and Goal Clarity in Federal Agencies



Notes: PART score residuals were generated by regressing agency OMB results scores measuring agency performance on goals on agency political preferences and total agency program funding. Ranking on goal clarity determined by ordering agencies from smallest to largest based on percentage of agency employees that strongly agree with statement: “I know how my work relates to the agency’s goals and priorities.” Mean and median percentages were then computed for lower one-third, middle one-third, and highest one-third of agencies.

Tables 3-1 above and 3-2 below present evidence on the second relationship of interest, that between multiple-purpose regulators and goal ambiguity. If multiple-purpose regulators perform worse than other agencies because of the goal ambiguity associated with combining regulatory and non-regulatory missions, one should expect to see an association between the two variables. Table 3-1 provides descriptive evidence to support this proposition. The line items which summarize the percentage of personnel who strongly agree that they understand how their work relates to agency goals reveal that civil servants in multiple-purpose regulatory agencies are less likely than employees of other types of agencies to be able to link their work to agency goals.

Table 3-2 – Difference in Means Test of Goal Clarity for Multiple-Purpose Regulators Relative to Those that Are Not

Group	Obs.	Mean Score	Standard Error	Statistic
Regulatory Only or Non-Regulatory (Non-Mixed)	106	0.3226	0.0075	
Multiple-Purpose	38	0.2912	0.0068	
Combined	144	0.3143	0.0059	
Difference Between Non-Mixed & Multiple-Purpose		0.0314	0.0132	
t-statistic				2.3822
p-value for Ha: Non-Mixed \neq Multiple-Purpose				0.0185
p-value for Ha: Non-Mixed $>$ Multiple-Purpose				0.0093

Notes: Mean score for regulatory only or non-regulatory agencies is response bias adjusted average proportion of agency personnel that strongly agree that they know how their work relates to agency goals and priorities for those agencies that either only engage in regulatory programs or only engage in non-regulatory programs. Mean score for multiple-purpose agencies is computed in same manner for those agencies that are responsible for both regulatory and non-regulatory programs.

Although the differences are not exceptionally large, the percentage is lower among multiple-purpose regulators regardless of whether the comparison group is non-regulators or agencies that only regulate. Further, as the difference in means test in Table 3-2 above suggests, the ratios are significantly different. The null that those that mix regulatory and non-regulatory tasks do not differ from those that do not mix tasks is rejected at the 1% level when the alternative hypothesis is one-sided and at the 5% level when it is two-sided. Thus, the descriptive evidence supports the premise that agency personnel will be somewhat less apt to

understand how their work relates to agency goals when the agency is asked to mix regulatory and non-regulatory tasks.

In addition to offering new evidence connecting goal ambiguity to agency performance, the findings of Figure 3-1 as well as Tables 3-1 and 3-2 are important because they provide a foundation for the more detailed regression analyses that follow. There are at least two reasons for this. First, the connection between performance and civil servants' perceptions of how their work relates to goals further validates the latter variable's use as an indicator of goal ambiguity. Certainly, the robustness checks and theoretical arguments detailed in the next section will provide the primary support for using the FHCS instrument as an indicator of goal ambiguity. Nevertheless, further confirmation is offered through the simple descriptive evidence. Second, the fact that multiple-purpose regulators do exhibit greater levels of ambiguity suggests that examining whether this relationship can explain goal performance makes sense. Without evidence of a connection between multiple-purpose regulators and goal ambiguity, there would seem to be relatively little value in trying to use clarity as an explanation for the performance of these same regulators.

Having reviewed the descriptive evidence, I now shift attention to Table 3-3 which presents a series of regressions. These regressions both bolster previous findings and further illuminate the connection between regulatory and non-regulatory tasks, ambiguity, and performance. Although they generally follow the same structure as those described in Chapter 2, the difference is that these regressions include some combination of the multiple-purpose regulator dummy as well as the FHCS survey question. Thus, recalling the original regression specification where $p = m\mu + d\delta + \varepsilon$, neither p , representing PART goal performance, nor d , a matrix of agency

demographic variables, change. However, m which was a matrix measuring the extent to which the agency mixes regulatory and non-regulatory functions now includes goal clarity as well.

For purposes of making comparisons more straightforward, the first specification simply replicates the results from the first model in Table 2-3. However, specification two—which replaces the multiple-purpose regulator indicator with the percentage of personnel that strongly relate to the agency’s goals and priorities—confirms the descriptive evidence that clarity of purpose does positively affect agency goal attainment. Holding agency funding and political preferences constant, the variable measuring the extent to which employees relate their work to organizational goals is significant at close to the 1% level. In addition, the coefficient suggests that employee clarity has a substantial effect on performance. A one standard deviation or 7.1% increase in the number of agency personnel that strongly relate their work to agency goals is associated with over a four point increase in agency performance on those goals. Given the average PART score is 54.55, this increase represents roughly a 7.6% increase in agency attainment. Furthermore, the magnitudes and significance levels associated with the demographic variables—particularly agency political preferences—are similar to those found in specification one in the table.

Unlike model two which demonstrates the impact of goal clarity independent of whether the agency is a multiple-purpose regulator, the third specification presents a rudimentary test of whether that relationship can help explain multiple-purpose performance as well. In stage one, I used a probit model to relate the multiple-purpose regulator dummy to the percentage of agency personnel that strongly agreed that they knew how their work related to agency goals. The predicted probabilities from that regression—measuring the association between multiple-purpose regulators and goal ambiguity—were then inserted into the basic specification.

This model expands upon the test in Table 3-2 which demonstrated the connection between goal ambiguity and multiple-purpose regulators to now ask whether that connection explains performance. As the third column indicates, the predicted probability that an agency both regulates and engages in non-regulatory tasks given its employees ability to relate their tasks to agency goals is a significant predictor of agency goal attainment. This rough test supports the notion that goal clarity is a factor which helps explain multiple-purpose regulatory agency performance, suggesting that combining regulatory and non-regulatory tasks leads to lower goal attainment because the arrangement negatively affects employees' ability to relate their work to agency goals.

Table 3-3 – Regressions of Agency Goal Performance Incorporating Relative Organizational Ambiguity

Variable	Specification 1	Specification 2	Specification 3	Specification 4	Specification 5
Multiple-Purpose Regulator Dummy	-9.4951*** (3.6218)	---	---	-8.1904** (3.6441)	-9.4901** (4.1635)
Strongly Relate to Goals and Priorities	---	58.2012** (24.3549)	---	48.2717** (24.4057)	1.1195 (42.8982)
Multiple-Purpose Dummy Associated with Strongly Relate to Goals	---	---	-38.2629** (18.4307)	---	---
Agency Political Preferences	5.2339*** (1.6219)	5.6495*** (1.6414)	5.5170*** (1.6457)	5.6346*** (1.6177)	---
ln(Total Agency Funding)	0.1891 (0.7445)	0.6369 (0.7760)	0.5595 (0.7780)	0.5962 (0.7650)	-1.0093 (1.2284)
Constant	55.4969*** (5.7949)	31.4345*** (10.8198)	60.3696*** (6.7088)	37.0431*** (10.9514)	56.7064** (27.5394)
Departmental Dummies?	No	No	No	No	Yes
Observations	141	141	141	141	144
F-statistic (d_1, d_2)	5.76 (3,137)	5.34 (3,137)	4.84 (3,137)	5.39 (4,136)	2.01 (52,91)
R-squared	0.112	0.105	0.096	0.137	0.535
Adjusted R-squared	0.093	0.085	0.076	0.111	0.270

Notes: Dependent variable is Agency OMB PART Score as described in Table 3-1. Observations associated with the independent variable labeled Multiple-Purpose Dummy Associated with Strongly Relate to Goals are the probabilities generated from a probit model of the variable Multiple-Purpose Regulatory Dummy on the variable Strongly Relate to Goals and Priorities. Standard errors are in parentheses. Tests of significance are tests of difference from zero. Significance levels: *** implies $p < 0.01$; ** implies $p < 0.05$; * implies $p < 0.10$. The first four regressions include three less observations because agency political preferences derived from the Clinton and Lewis measure are not available for three agencies in the OMB PART dataset.

The fourth and fifth columns provide further evidence related to the separate effects of and relationship between multiple-purpose regulatory agencies and the extent to which personnel relate their work to agency goals. Although both regression specifications include agency funding, column four presents the results with agency political preferences while column five instead includes departmental dummies. Focusing first on the results from column four, both variables of interest are significant at the 5% level. Further, as expected, comparing the coefficient on the survey response to that in column two demonstrates a decline in the effect. Adding the multiple-purpose regulatory dummy to a regression of agency goal performance on the percentage of agency employees that strongly relate their jobs to the organization goals reduces its effect by 17%.

Comparing specification one with specification four in Table 3-3 suggests that including both variables simultaneously reduces the independent impact on agency goal performance of combining regulatory and non-regulatory tasks as well. Implementing a test proposed by Clogg, Petkova, and Haritou (1995)—designed to ascertain whether the difference in coefficients from different models using the same data sample is significant—reveals that the change in the magnitude of the coefficient on the multiple-purpose dummy is significant right at the 5% level. Moreover, the point estimates from the two models suggest that entering information on goal clarity diminishes the effect of combining regulatory and non-regulatory functions by close to 14%, a substantial nominal impact. Of course, given the findings of the goal ambiguity literature as they relate to agencies that mix regulatory and non-regulatory tasks, these impacts are not necessarily unexpected. The results described earlier in Tables 3-1 and 3-2 as well as the third column from Table 3-3 also reveal that the variables are related.

Interestingly however, the results from column five demonstrate that when both the measure of goal ambiguity and the multiple-purpose regulator dummy are entered in the presence of departmental indicator variables, the effect of the former diminishes substantially. In addition, that same variable—the impact of agency employees’ views of how well their functions relate to agency goals and priorities—is no longer significant. Given this, it is not surprising that adding the survey results in the presence of departmental dummies does little to change the coefficient or significance of the multiple-purpose regulatory dummy. The variable is significant at 5% in either case.

Summarizing, I find that agency employees’ perceptions of how their work relates agency goals is a significant predictor of agency performance in three of the four specifications. Even so, the effect of the multiple-purpose regulatory dummy on agency performance is consistent across the board. In every model, regulators that also engage in non-regulatory tasks perform significantly worse than those that do not mix regulatory and non-regulatory functions. Importantly, this remains true even in the presence of agency goal ambiguity. These findings suggest that in addition to goal ambiguity, there may be other factors that help explain the performance of agencies that mix regulatory and non-regulatory programs. Holding the percentage of employees that know how their work relates to agency goals constant, for the average agency, mixing regulatory and non-regulatory tasks is still associated with a 15% to 17.4% decline in OMB’s measure of goal achievement, an effect which is both statistically significant and practically important.

Assessing the Role of Measurement Error

Given the empirical relationship between multiple-purpose regulators and goal ambiguity uncovered in this chapter, it might not surprise us that after inserting the latter variable into the statistical model, the association between such regulators and performance diminishes. At the same time, it is striking that combining regulatory and non-regulatory purposes still significantly impedes goal performance even after controlling for ambiguity. In this section, I further explore the robustness of these results, building on my brief earlier discussion of measurement error.

Measurement error can have important ramifications for interpreting the coefficient of the impacted variable. When the error associated with measuring an independent variable is unrelated to its true value, attenuation bias can result where the coefficient will tend toward zero (Wooldridge 2002, p. 75). Since I am interested in separating the effects of goal ambiguity from other factors that might explain multiple-purpose regulator performance, characterizing the nature of the bias associated with my measure of goal clarity would appear especially important. If goal clarity is imprecisely measured, it might seem logical to conclude that its effect would be soaked up by the multiple-purpose regulator dummy in the regression results. The coefficient on goal clarity would then be understated because of attenuation bias, and the coefficient on the multiple-purpose dummy would be simultaneously overstated.

In reality, the relationships are not that easy to characterize. While it is true that measurement error in one variable can impact the estimated coefficients of the others in a multiple regression, the directions of the effects are difficult to predict since they depend on factors that cannot be estimated (Greene 2008, p. 327). Moreover, the attenuation bias generated by an errors-in-variables problem relies on the assumption that the true variable is uncorrelated with the measurement error. When this assumption is relaxed, the direction of the bias can

change. In the univariate case, it can be shown that a negative correlation between the true value and the error will result in a coefficient that is actually too large (Wacholder 1995).

To demonstrate how this may impact the analysis, let us assume that two agencies exist, one with perfectly clear goals and the other with no clarity at all. In this situation, it follows that any errors made by employees in representing goal clarity in the former organization will be to underreport goal clarity. On the other hand, errors made by agency personnel in the latter will be to overstate goal clarity. As a result, those agencies with very high clarity will also be those with negative errors and those with low clarity will also be those agencies where the errors are positive. Of course, if this is the case, the correlation between the true values of clarity and the errors will be negative.

Alternatively, it is not hard to imagine that agencies with greater numbers of employees who are ignorant of the agency's goals would also be those organizations whose goals are less clear. If agencies place little emphasis on precisely defining their goals, why would they push their workers to know what those goals are? Similarly, when employees decide to remain oblivious of agency goals, why would the agency spend time defining them? If some subset of employees over represent their clarity on goals because, for example, they are concerned about the impression they would make by telling the truth, an agency with more personnel who do not know the goals will also be those with more, on average, that report clarity levels which exceed the true agency value. As a result, those agencies with low levels of clarity will be those with more positive errors. In either case, if the correlation between the error and true goal clarity is negative, the estimate of the effect of goal clarity on agency performance may actually be too large.

In addition to raising the possibility that the effect of goal clarity on performance is actually overstated—and not understated—in the regression models, a negative correlation between clarity and the measurement error could simultaneously affect the interpretation of the residual effect of multiple purposes on performance. To show how, I can use same necessarily simplified logic which allowed me to explain why an artificially weakened relationship between clarity and performance could cause the regression to overstate the separate effect of the multiple-purpose dummy. If the presence of a regulator which combines other missions still negatively impacts goal performance in the face of the overstated effect of goal clarity, one might be inclined to believe the unidentified other factors affecting multiple-purpose regulatory performance are even more important. Holding clarity constant, the estimated effect of the multiple-purpose regulator dummy may then actually reflect a lower bound for its true value.

Given the complications associated with predicting how measurement error might affect the regression output, it is helpful to review possible sources of the error and present some empirical evidence of their effect. It turns out that the sources are varied, but their effects are minimal. Error may derive from the fact that I focus on one question from the surveys and use the percent of individuals within that agency that strongly agree that they know how their jobs relate to agency goals to compute clarity. Because the measure is prepared from a somewhat limited set of information, the impact of respondent mistakes in answering the question might seem important. Still, I aggregate the individual responses at the agency level. Furthermore, I incorporate two panels of FHCS data and take the mean to generate my measure of goal ambiguity. Thus, if individual respondent errors are random, one might expect them to have little influence once the data are aggregated.

The steps outlined above limit the influence of respondents' mistakes, but they do not mitigate any measurement error that I introduce by focusing particular attention on agency personnel that strongly agree with the survey question chosen. One possible consequence of this choice is that an agency with employees with extreme views—both positive and negative—might produce an artificially inflated aggregate level of clarity relative to an otherwise similarly situated agency that has employees with more moderate views.

To test this possibility, I prepared a measure incorporating the full breath of agency personnel responses to compare against the percentage based indicator used in the analysis. In generating the variable, I computed the percent of agency personnel, corrected for respondent bias, in each of the five response categories ranging from “Strongly Disagree” to “Strongly Agree.” I removed respondents that answered “Do Not Know” in the results that I report here, but their inclusion makes no difference. Although the scale for the survey item is ordinal, I was not able to use the median response as my measure since doing so produced little variation among agencies. Instead, by assigning values ranging from one to five where one represents the response “Strongly Disagree” and five represents “Strongly Agree,” I computed the agency score on goal clarity as the average agency response weighted by the percentage of personnel answering in each category.

The correlation coefficient between this measure and one focused solely on agency personnel that strongly agree is 0.862. Thus, those agencies in which more personnel strongly relate to agency goals are also those in which the full employee base is more apt to relate to agency goals. To further test the impact of the computational choice, I also reproduced the analyses in Table 3-3 substituting the alternative measure in place of the percentage that strongly agree. The statistical results and associated conclusions did not change in any material way for

any specification. To demonstrate, the first two columns in Table 3-4 below replicate models two and four from Table 3-3 with the alternative variable. Although the estimate of the negative effect of multiple purposes on performance declines very slightly, the statistical significance of both it and the revised measure of goal clarity remains. Moreover, the demographic controls are unaffected as well. Given that the computational choice made little difference and that the percentage based measure is easier to interpret, the percent of agency personnel that strongly agree that they know how their jobs relate to agency goals was chosen to relate the findings of this chapter.

Table 3-4 – Regressions of Agency Goal Performance Incorporating Alternative Measures of Goal Clarity

Variable	Full Scale		Composite Score	
	Specification 1	Specification 2	Specification 3	Specification 4
Multiple-Purpose Regulator Dummy	---	-7.7258** (3.6461)	---	-8.6586** (3.5988)
Goal Clarity Measure	35.1020*** (12.5836)	29.4668** (12.7077)	69.5870** (29.6020)	61.8358** (29.2756)
Agency Political Preferences	5.3733*** (1.6185)	5.4039*** (1.5983)	5.4337*** (1.6337)	5.4763*** (1.6059)
ln(Total Agency Funding)	0.5060 (0.7536)	0.4888 (0.7442)	0.5233 (0.7656)	0.5273 (0.7525)
Constant	-92.5640* (52.6104)	-67.3757 (53.2955)	34.6602*** (9.8103)	38.7204*** (9.7898)
Observations	141	141	141	141
F-statistic (d ₁ ,d ₂)	6.08 (3,137)	5.80 (4,136)	5.27 (3,137)	5.54 (4,136)
R-squared	0.118	0.146	0.104	0.140
Adjusted R-squared	0.098	0.121	0.084	0.115

Notes: Dependent variable is Agency OMB PART Score as described in Table 3-1. First two columns labeled Full Scale relate regression results using a measure of goal clarity computed as the agency weighted average of responses to OPM's FHCS survey question, "I know how my work relates to the agency's goals and priorities." Removing respondents that answered "Do Not Know" and using percent of agency personnel in each of remaining five response categories ranging from "Strongly Disagree" to "Strongly Agree," the computed agency score on goal clarity represents the average agency response weighted by the percentage of personnel answering in each category on a five point scale where one represents "Strongly Disagree" and five represents "Strongly Agree." Last two columns labeled Composite Score relate regression results using a measure of goal clarity computed as the simple average of the percent of agency employees that strongly agree with above statement as well as "Managers communicate the goals and priorities of the organization" and "Managers review and evaluate the organization's progress toward meeting its goals and objectives." Tests of significance are tests of difference from zero. Significance levels: *** implies $p < 0.01$; ** implies $p < 0.05$; * implies $p < 0.10$.

In addition to potentially accompanying the construction of the survey variable, measurement error can also derive from the wording of the survey question itself. As described above, one possibility is that agency personnel might not understand how their tasks relate to goals because they do not know what the goals of the agency are. Alternatively, that individual may not be clear on what his or her job actually is. However, in addition to already showing how the direction of the bias generated by this source might actually strengthen the chapter's conclusions, one might suspect that instances of employee ignorance of this sort are somewhat rare and, moreover, closely resemble ambiguity anyway.

Similarly, in addition to being too broad, one might also worry that the phrasing of the question is not crisp enough to assess the particular source of ambiguity at play with multiple-purpose regulators. While the extent to which personnel relate to the goals of the agency may measure general goal ambiguity, the hypothesis in question in this chapter is tied to a particular type of ambiguity which derives from combining goals in one organization. Thus, it may appear that the measure I have chosen is not appropriate to test whether multiple-purpose regulators perform worse because of priority ambiguity specifically.

Yet, to the extent that combining regulatory and non-regulatory functions increases the number of tasks, creates additional complexity, and induces conflicts, one should expect that agency personnel would be less able to see how their functions connect to organizational goals. This might be because more tasks lead to more goals or more tasks lead to more ambiguous goals (Gormley & Balla 2007). In either case, agencies that display those attributes should also, in keeping with the goal ambiguity scholarship, have personnel that, on average, see weaker links between their tasks and the organization's goals (Chun & Rainey 2005a, 2005b). Further, when an organization responds by focusing on a subset of the goals in an effort to encourage

clarity of purpose, it will impact how at least some within the organization perceive the link between their roles and the organization's goals. The group whose goals have been subverted will be less able to connect their jobs to the agency purpose. Absent not assigning any personnel to the secondary functions, relative to an agency without such complexity, organizations which submit some functions to raise others should then, on average, have more employees less able to see the link between their work and the organization's goals and priorities. Even the survey itself seems to consider this possibility. The question explicitly asks respondents whether their work relates to agency goals as well as priorities. Since comprehending agency priorities is exactly the difficulty that arises when multiple-purposes are located at one agency, including the term priorities should certainly capture that effect.

To provide some empirical evidence related to how well the question selected accurately reflects goal ambiguity, I performed a final robustness check to assess how sensitive the results were to the actual phrasing of the survey item. To do so, I created a composite measure of goal clarity by incorporating additional questions from the OPM surveys. I computed the percent of agency employees—weighted for respondent bias—that strongly agree with each of the statements: “Managers communicate the goals and priorities of the organization” and “Managers review and evaluate the organization's progress toward meeting its goals and objectives” (U.S. Office of Personnel Management 2006, 2008). I then took the simple mean of those percentages along with the percent that strongly agree that they know how their jobs relate to agency goals for each agency. I substituted the resulting percentages for my initial measure of goal clarity and ran the analysis associated with Table 3-3 again. I found that all of the relationships still hold using the composite measure. Columns three and four in Table 3-4 present some sample results where the revised variable is inserted in specifications two and four from Table 3-3. As the table

suggests, even to the extent that the survey question does create measurement error derived from its wording, the uncertainty associated with how respondents interpret the questions appears to have little effect on the results and certainly does not impact the conclusions of the study.

Summarizing the Results to Introduce Part II

In the previous section, I reviewed a variety of reasons why the impacts of any measurement errors associated with the indicator of goal clarity used in this study are likely to be small. Even so, the consistency of the coefficients themselves provides perhaps the most compelling evidence for this assertion. The findings derived through a variety of descriptive, statistical, and regression-based tests are remarkably uniform. In addition to the consistency associated with the effects of the core variables of interest, the relationships between the demographic control variables and agency performance also reveal stable patterns. Altogether, these results take us a long way toward understanding the behavior of multiple-purpose regulators.

The chapter began by asking whether one could appeal to goal ambiguity to explain why multiple-purpose regulators perform worse. The subsequent statistical analyses suggest yes—but also that ambiguity is not sufficient to understand the behavior of agencies which combine regulatory and non-regulatory purposes. Employing a dataset of 144 federal agencies generated through two independent government data sources, this study presents four findings to shed light on the relationships between multiple-purpose regulators, goal ambiguity, and performance. First, I show that agencies which exhibit greater goal clarity perform better on those goals. The analysis, shown in Figure 3-1 and Table 3-3, reveals the strong and statistically significant empirical relationship that exists between the extent to which agency personnel understand how their work relates to goals and agency goal performance. Using a measure of goal clarity derived

from OPM's bi-annual surveys of agency personnel, these results bolster the limited existing empirical evidence that supports the connection between goal ambiguity and agency behavior. Moreover, they do so using a new methodology which assesses goal ambiguity through the eyes of agency employees.

Second, I demonstrate that multiple-purpose regulators exhibit greater levels of goal ambiguity relative to agencies that do not combine regulatory and non-regulatory tasks. The evidence, documented through Table 3-1, reveals that staff within multiple-purpose regulatory agencies are less apt to know how their work relates to agency goals regardless of whether the comparison group is non-regulators or agencies that only regulate. Moreover, Table 3-2 shows through a simple difference in means test that the difference in goal clarity between multiple-purpose regulators and others is statistically significant. Associated with this finding, the third insight derived from this chapter is that goal ambiguity partially explains why multiple-purpose regulators are less able to achieve their goals. Using a rudimentary test, specification three in Table 3-3 illustrates that the portion of multiple-purpose agencies explained by differing levels of goal ambiguity is strongly associated with relatively poor performance. Moreover, in comparing specifications one and four, I find that in addition to being significant at the 5% level in a comparison test, including the extent to which personnel are clear on agency goals diminishes the negative association between multiple-purpose regulators and goal performance by 14%. Thus, regulators that are also responsible for non-regulatory functions are less likely to achieve policy goals in part because their employees are also less clear on how their functions relate to these goals.

Yet, although goal ambiguity offers a partial explanation for why multiple-purpose regulators perform worse, the final finding of this chapter establishes that ambiguity is not

enough to explain the differences between multiple-purpose regulators and other agencies. As displayed most clearly through regression specifications four and five in Table 3-3, regulators that are assigned non-regulatory tasks score lower on OMB PART evaluations even holding constant the extent to which employees are clear on how their work relates to agency goals. Given that combining purposes is still associated with over a 15% decline in performance, the results are practically important as well as statistically significant. Moreover, in addition to controlling for agency funding and political orientation, the relationship remains firm even when accounting for the differences that exist between the governmental departments in which these agencies reside.

These results demonstrate that it is not simply because of random error that goal ambiguity fails to fully explain multiple-purpose performance. Rather, even after accounting for goal ambiguity and considering random error, regulators saddled with other functions are substantially less able to achieve their goals, and, moreover, the differences are statistically important. Thus, while the impact of goal ambiguity is still meaningful, there appears to be more to the connection between multiple-purpose regulators and goal attainment. Because merging regulatory and non-regulatory functions results in diminished performance for reasons that appear unrelated to goal ambiguity, to more fully understand multiple-purpose regulatory performance, we need to look beyond the effects of goal ambiguity to consider other factors.

It is this purpose which in part motivates the investigation in the chapters to follow. Studying the creation, development, and eventual breakup of MMS—the regulator assigned to oversee offshore oil drilling and production prior to the Gulf oil spill—I begin to demarcate other factors that can help explain multiple-purpose regulatory agency behavior. In particular, I show that a tendency to fixate on the more notable goal ambiguity and conflicts within an agency can

obscure the more subtle and mundane, but no less important, need to coordinate the underlying tasks. Interestingly, while scholars studying goal ambiguity often do not distinguish between agency goals and the underlying tasks which support those goals (see Wright (2004) for one exception), the survey question that forms the basis of the analysis in this chapter does—explicitly distinguishing between the jobs performed by agency personnel and the goals which shape how the tasks are completed.

Part II of this dissertation shows that explicitly acknowledging the distinction between tasks and goals can be significant. The completion of one function can impact the completion of another. When this is true, as it was for MMS, explicitly differentiating between functions and goals becomes important to understanding why some agencies are created in the way they are. Although the goals themselves may be unrelated or, worse yet, conflict, the associated tasks might need to be coordinated and pursued jointly to achieve agency ends. Similar to how the decision to break up an agency can be a way to mitigate goal ambiguity, we will see in MMS's creation that single agencies can be designed to minimize conflicts as well. Still, to the extent that an organization is structured to manage goal conflict, this decision can simultaneously exacerbate the difficulties associated with coordinating the associated functions. As a result, it should not surprise anyone that multiple-purpose regulators generally perform worse even holding constant the level of clarity. For in reducing goal ambiguity, underlying task coordination can be made more difficult.

Part II

Examining the Role of Regulatory Agency Design in the Gulf Oil Disaster

Chapter 4

Balancing Conflict and Coordination at MMS

To most observers, Minerals Management Service (MMS) and its role in the Gulf oil spill presents a classic example of how agency goal conflicts can lead to regulatory failure. A now defunct agency of the Department of the Interior (Interior) that employed roughly 1,600 federal workers (Minerals Management Service 2010), MMS collected onshore and offshore oil and gas tax revenue and also facilitated oil and gas production in federal waters. However, at the same time, the agency was tasked with regulating the companies responsible for that production. Many commentators have asserted that joining conflicting regulatory and production oriented tasks at MMS restricted the agency's ability to foster a common purpose among its employees (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011, p. 78)—much like the goal ambiguity scholarship highlighted in Chapter 3 suggests more generally. Echoing the insights of public administration scholars and practitioners (Drucker 1980, Wilson 1989, Shalala 1998), this arrangement is said to have encouraged MMS to neglect its regulatory function in an effort to overcome its organizational shortcomings (Flournoy et al. 2010, Forbis 2011, Honigsberg 2011).

Confirmation of MMS's failure is tangible given its association with the April 2010 *Deepwater Horizon* oil rig fire and spill that deposited roughly 4.9 million barrels of oil into the Gulf of Mexico and has historians debating its place on the list of biggest environmental disasters in U.S. history (Fahrenthold & Mui 2010, U.S. Geological Survey 2010). Perhaps even more telling, behavior at MMS provides support for the notion that the agency may have been a key contributor to the Gulf disaster. One only has to review the findings of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling to find plenty of

examples of shortcomings in MMS's approach to regulating (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011). In addition, recent Department of the Interior Office of Inspector General (OIG) investigative reports present evidence that MMS not only neglected its oil and gas oversight responsibilities but was captured as well (Flournoy et al. 2010, Peters 2010). Behavior at the agency provided rare public evidence of the types of activities including bribery and excessive gift exchange that theorists have insisted occurs in captured regulatory relationships (Peltzman 1976, Stigler 1971). In addition, soon after the onset of the spill, reports began to emerge that some MMS scientists did not believe that their findings of potential environmental risks associated with oil and gas drilling were sufficiently considered in agency decisions to lease certain offshore properties to oil and gas companies (Eilperin 2010, Urbina 2010b).

Managing Tax Collection and Regulation

Given the evidence and MMS's outwardly conflicting functions, it is not surprising that most observers regard the experience of the agency as a reaffirmation of the conclusions of the goal ambiguity literature summarized in Chapter 3. That literature warns of the perverse effects of combining too many functions in one organization (Chun & Rainey 2005a, Locke & Latham 1990, Wilson 1989). It is also not surprising that the Secretary of the Interior Salazar announced on May 19, 2010 that he was disbanding the agency, one month after the initial explosion on the *Deepwater Horizon* drill ship. Citing conflicts of interest in fulfilling its goals associated with revenue collection, regulatory oversight, and energy development, the Secretary outlined a plan to reorganize MMS by separating these functions into three discrete organizations within Interior (Department of the Interior 2010).

In this chapter, I focus on the first of these alleged conflicts—that between MMS’s functions as revenue collector and regulator. I examine the organizational and political development of the agency to critically evaluate the claim that its role to collect oil and gas tax revenue restricted its ability to adequately oversee offshore drilling. The study reveals that even to the extent that the goals associated with MMS’s regulatory and non-regulatory tasks did conflict, the underlying tasks themselves required extensive coordination. Further, as shown through the structure of MMS’s Offshore Energy and Revenue Management divisions, MMS was organized to mitigate the impact of conflicting purposes but to the detriment of their synchronization where necessary. As a result, the problems MMS was facing throughout most of its history—problems which were mainly relegated to its mission to collect tax revenue—were driven by failures of coordination and not by goal conflict.

The MMS story has important implications for the literature on goal ambiguity. The creation of MMS clearly demonstrates a fundamental choice in regulatory agency design between either focusing on clarifying goals or focusing on supporting the execution of the underlying tasks. Interestingly, the structure and operations at MMS reveal a relative emphasis on each simultaneously. With regard to the conflict between regulatory oversight and revenue collection, in reaction to the failings of its predecessor—the U.S. Geological Survey (USGS)—to adequately consider revenue collection, MMS was organized to separate its core missions of revenue collection and offshore energy management into two independent units within the agency. Yet, this decision limited MMS’s ability to coordinate the activities of these functions where it was necessary. On the other hand, the decision to combine offshore regulatory oversight and development in a single division was a reaction to the failings of USGS and the Bureau of Land Management (BLM) to adequately coordinate these tasks when they were split

between the two agencies. However, as described in the next chapter which examines the effects of MMS's political environment on its decision-making processes, this paved the way for MMS to emphasize oil and gas development relative to environmental protection and safety in reaction to public and political preferences. Finally, the evidence shows that MMS's conflicting revenue collection and regulatory goals had much less of a role in promoting its regulatory lassitude than is generally believed. Given that MMS was designed with this exact issue in mind, the fact that much of the evidence contradicts the hypothesis that revenue collection led to regulatory failure follows quite logically.

The purpose of the analysis in this chapter is not to suggest that conflicting goals played no role in the Gulf disaster. It is rather to warn against overemphasizing this characteristic while dismissing other factors that are also important. The case of MMS's creation and recent disbanding suggests that researchers and policymakers need to be careful in prescribing remedies that solely focus on more salient goal conflicts to the detriment of the complementarities associated with the underlying tasks. Unlike common discourse in political science which has focused attention on the often dysfunctional process of assigning policy to agencies (Mayhew 1974, Moe 1990, Pressman & Wildavsky 1984), the case of MMS reveals that sometimes tasks—even those associated with conflicting goals—are combined in one agency for a reason. Thus, it should not surprise anyone, really, that the broad evidence supplied in Chapters 2 and 3 indicated that regulators which also engage in non-regulatory functions do worse on average, for this may be driven by the inherent complexity associated with carrying out their tasks. To the extent that such multiple-purpose regulators organize themselves to minimize goal conflict, these organizational decisions can exacerbate difficulties associated with coordinating the underlying

tasks which in some cases will be the purpose of joining the functions in one agency in the first place.

Structure, Goal Conflict, and Regulatory Laxity

The magnitude of the disaster precipitated by the *Deepwater Horizon* oil rig fire and subsequent oil spill has generated great interest in determining its causes. In addition to the literally dozens of House and Senate hearings on the subject, numerous commissions have been tasked to investigate the accident. Naturally, as regulator for offshore oil and gas production, MMS's approach to regulating has occupied a central place in these inquiries. Through the investigations, critics have almost universally lamented MMS as an agency impeded by inadequate separation between itself and its regulated entities. This closeness is alleged to have precipitated MMS's lax efforts to oversee oil and gas production.

Further, these assertions have originated from a broad set of commentators. Media outlets including the New York Times and Washington Post have chronicled the exploits of MMS, citing its "partnership" and overly "cozy ties to industry" as important factors in explaining MMS's inadequate performance of its regulatory duties (Eilperin & Higham 2010, Urbina 2010a). Referencing these stories, research institutions as ideologically varied as the Center for Progressive Reform and CATO have nonetheless agreed that MMS presents a clear example of a captured agency (CATO Institute 2010, Flournoy et al. 2010). Politicians' opinions are similarly unified in their view of MMS. This perception is perhaps best exemplified in President Obama's remark during his May 2010 press conference temporarily halting deep water drilling that "the oil industry's cozy and sometimes corrupt relationship with government regulators meant little or no regulation at all" (Obama 2010c). The many commissions tasked to investigate the accident

have also often reached the same conclusion. When asked to comment on Interior's reorganization plan for the agency, a co-chairman of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling commented that MMS was "overly susceptible to industry influence, certainly outgunned and possibly captured" (Peters 2010). Further, during hearings conducted by the National Commission, former MMS Director Elizabeth Birnbaum even acknowledged the "close connection" that existed between the agency's inspectors and oil and gas industry employees (Birnbaum 2010a).

The near consensus view that MMS maintained insufficient distance between itself and its regulated entities is no doubt at least partially prompted by tangible evidence of the indiscretions of some members of MMS. These indiscretions are revealed through two Department of the Interior Office of Inspector General (OIG) communications (Devaney 2008, Kendall 2010a). The first, released in September 2008 to summarize the results of three separate investigations, focused primarily on the activities between 2002 and 2006 of members of the Royalty in Kind (RIK) Program within MMS's Minerals Revenue Management (Revenue Management) division. The RIK Program was an initiative designed to allow MMS to receive royalty revenue from industry by taking possession of a portion of the oil and gas produced rather than the monetary equivalent and subsequently selling that oil and gas on the open market (Devaney 2008, Office of the Inspector General 2008c, p. 2). The memorandum and associated investigative reports detail the extent to which nine of the nineteen implicated employees accepted industry gifts in the form of unreimbursed meals, parties, trips, and attendance at events such as golf tournaments (Devaney 2008, p. 2; Office of the Inspector General 2008c, p. 5). Further, two of the cited employees admitted to "brief sexual relationships" with industry contacts and confided that industry events often included alcohol consumption (Office of the Inspector General 2008c, p.

8). OIG also uncovered evidence of outside employment that was not reported on internal disclosure forms. In one case, the individual appears to have deliberately withheld his involvement in a firm that consulted to oil and gas companies interacting with the RIK Program (Office of the Inspector General 2008b). Finally, one report describes how three senior officials in the broader Revenue Management division “remained calculatedly ignorant of the rules governing post-employment restrictions” in awarding two consulting contracts to two of these employees after they retired from MMS (Devaney 2008, p. 2; Office of the Inspector General 2008a).

The other memorandum from May 2010 summarizes the results of an investigation of the Lake Charles, LA district office, one of five offices charged with overseeing oil and gas operations in the Gulf of Mexico (Kendall 2010a). The communication and associated report describes the extent to which MMS employees in the office accepted gifts from offshore operators such as lunches and admission to sporting events in addition to participating in events with industry personnel including golf outings and hunting and fishing trips (Kendall 2010a, Office of the Inspector General 2010b). When asked about the events, one employee noted, “Almost all of our inspectors have worked for oil companies out on these same platforms. They grew up in the same towns...Some of these people, they’ve been friends with all their life” (Office of the Inspector General 2010b, p. 3). The earliest reference to such activities is in 2000. However, they ceased in 2007 after MMS’s Regional Director for the Gulf in New Orleans alleged that his Regional Supervisor had accepted fishing and hunting trips from an offshore drilling operator, prompting the Supervisor to issue a letter supporting a \$90 million insurance claim by the company for a drilling rig that sunk during Hurricane Rita (Office of the Inspector General 2010a, Office of the Inspector General 2010b). In reacting to the report, Secretary of the

Interior Salazar reaffirmed the general perception of MMS, suggesting it was “further evidence of the cozy relationship between some elements of MMS and the oil and gas industry” (Office of the Secretary of the Interior 2010b).

Given the widely held view that MMS’s “coziness” and associated regulatory torpor indeed played an important role in facilitating the Gulf disaster, many have turned attention to explaining the origin of MMS’s laxity. One influential explanation has centered on MMS’s charge to fulfill multiple and generally regarded as conflicting goals (Bagley 2010). When it was created in 1982 by then Secretary of the Interior James Watt, MMS was tasked with the role of collecting and distributing the revenue generated from onshore and offshore leases of federal property to companies who used these lands to extract oil and natural gas for private sale (Durant 1992). However, Secretary Watt simultaneously entrusted the agency with overseeing the orderly development and regulation of offshore oil and gas production on the Outer Continental Shelf (OCS), which included the Atlantic and Pacific coasts as well as the waters of the Gulf and those surrounding Alaska (Durant 1992).

Many commentators have pointed to this design issue as one which laid the foundation for MMS’s failure (Flournoy et al. 2010, Forbis 2011, Honigsberg 2011, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011). Within the context of the goal ambiguity and conflict literature reviewed in Chapters 2 and 3, it is not difficult to see why. By initially structuring the agency such that it was tasked to collect revenue—and given that revenue could not be collected without production—the decision to place both functions in one agency made it difficult for MMS to fulfill its role as regulator, as doing so effectively would limit offshore development and resulting production. Thus, in restricting MMS’s ability from the outset to regulate effectively, the agency readily became a partner of the industry as the two were

never really at cross-purposes anyway (Honigsberg 2011). In a sense, MMS was doing exactly what one might expect an agency tasked with conflicting goals would do—subvert one to focus on the other. However, to make matters worse, the agency was also allowed to offset a substantial portion of its budget appropriations using the revenue it collected from oil and gas leases on federal lands (Flournoy et al. 2010). As a result, to the extent it accomplished its environmental protection and safety goals, it limited its own budget. However, conflict was not only present between the offshore management and revenue collection groups. It could also be identified within the management group itself. Divided into leasing and offshore operations, the first would oversee development and the second regulation. In the same way that revenue collection stymied regulation, having MMS manage offshore development further weakened its impetus to engage in effective regulation of offshore oil and gas activities.

In addition to its theoretical relevance, this view of MMS has motivated actual reform efforts as well. As described, it prompted Secretary Salazar's Order 3299 which separated the components of MMS into three agencies, one focused only on collecting revenue, another on offshore management, and the third on safety and environmental protection (Salazar 2010). In describing the reorganization, Salazar noted that MMS "has three distinct and conflicting missions that—for the benefit of effective enforcement, energy development, and revenue collection—must be divided" (Office of the Secretary of the Interior 2010a). Still, some do not think that such reforms are enough, advocating more radical reorganizations, including moving revenue collection to a separate department and dividing the tasks of MMS even more finely to create additional independent bureaucratic units (Flournoy et al. 2010).

A Role for the Policy Process

Without considering the politics of the process by which policy is designed and assigned, it might not be immediately clear how MMS could be set up with such an apparently dysfunctional structure. However, as scholars of the process have long understood, creation and execution of policy is anything but smooth (Kingdon 1984, Mazmanian & Sabatier 1983, Sabatier 1999). For one thing, in its development, one cannot predict all of the potential issues that may arise in implementation (Bardach 1977, Pressman & Wildavsky 1984). Perhaps this is nowhere better illustrated than in Jeffrey Pressman and Aaron Wildavsky's study of the Economic Development Administration's failure to implement a minority jobs program in Oakland, California beginning in the mid-1960's (1984). As their case study demonstrates, the policy process is likely to promote inclusiveness, increasing both the number of actors as well as the number of decision points associated with the completion of any government endeavor (although see O'Toole 2011 for one critique). As a consequence, even when a general consensus exists on the overall aims of the policy, the involvement of multiple stakeholders will produce greater complexity. Of course, the problem is only exacerbated when no consensus exists since the resulting law must be written to reflect the compromise necessary to ensure its passage (Lowi 1979, Warwick et al. 1975). The consequence is that statutes and other guidance may be laden with vague and contradictory language which does not sufficiently spell out the policy to be executed (Majone & Wildavsky 1984, pp. 168-172).

As described in Chapter 1, the existence of symbolic politics only adds to the difficulties. Both because politicians do not know how to best delegate policy and because such decisions are typically overlooked by voters, politicians are likely to give little consideration to where policies are assigned (Mayhew 1974, pp. 132-136). These problems appear particularly acute with

regulatory policies, where statutes are typically vague and often placatory reactions to public outcry when problems occur (Edelman 1967, pp. 23-29). Thus, policy assignment ends up receiving little consideration since the directive itself is what garners constituent attention—not its implementation which can occur over a period of years. In the end, the resulting inefficiencies are largely dealt with by the agency assigned to implement the statute or directive.

The result of this process is that agencies can be tasked with vague, unrelated, and even conflicting goals (Lipsky 1980, Wildavsky 1979, Wilson 1989). Moreover, this problem can become worse over time as additional responsibilities are placed with agencies through new statutes. From the perspective of the goal ambiguity scholarship, this ad hoc process of policy assignment can lead to exactly the type of ambiguity these authors bemoan (Chun & Rainey 2005a, Locke & Latham 1990). As described, agencies, attempting to assimilate the various functions placed with them, can make their goals more general in order to incorporate everything. Alternatively, in response, the agency may decide to simply add goals to correspond with the additional tasks (Gormley & Balla 2007). In the latter scenario, the agency is then faced with the dilemma of determining which of these goals to focus on in an attempt to avoid the impossible situation of implementing all of its assignments simultaneously (Drucker 1980, Wilson 1989). Such a dilemma can then result in the type of neglect alleged to have occurred with oil and gas oversight at MMS. In fact, some observers have suggested that the political process is intended to result in such outcomes—that in the spirit of democracy which places special emphasis on the status quo, one should not be surprised that government agencies are not efficient (see, e.g., Moe 1989, 1990). Instead, political principals may purposely create organizational impediments to keep agencies from being able to act with discretion. The result is that congressional and presidential oversight becomes more straightforward. Given that voters

tend to focus more on policy creation and less on its implementation, the cost of poor agency execution may not discipline politicians vying for reelection to focus more attention on properly assigning policy.

When viewed in this context, a claim that MMS was structured with such goal conflicts between its offshore oversight, revenue collection, and offshore development functions should not raise serious conceptual concerns. Even so, as the rest of this chapter reveals, this characterization of MMS does not correspond well with the evidence. In fact, the analysis that follows—which starts with MMS’s creation in 1982 and follows the development of its two main divisions, Revenue Management and Offshore Energy—shows that the agency was established in response to existing problems in the implementation of oil and gas policy. It was based on a consensus within and outside of government that both oil and gas revenue collection and management of offshore development needed to be improved. Furthermore, although it was accompanied by the Federal Oil and Gas Royalty Management Act of 1983, the reorganization was not necessarily a response to the assignment of new responsibilities related to oil and gas policy. Instead, the changes were initiated by Interior primarily as a way to improve execution of existing policy. In other words, as the follow section describes, the core issue which precipitated MMS’s creation was the typically neglected aspect of the policy process, namely its implementation.

Interior Department Deficiencies and MMS’s Organizational Development

MMS was established primarily as a result of the recommendations of the Commission on Fiscal Accountability of the Nation’s Energy Resources, otherwise known as the Linowes Commission. This Commission was an independent panel formed in 1981 to investigate the

performance of USGS as Interior minerals revenue collector (Hogue 2010, Linowes 1998).

USGS, authorized by Congress in 1926 to supervise performance of leases and royalty collection, was repeatedly criticized beginning in the late 1950s by the Government Accounting Office (later renamed the Government Accountability Office or GAO) as well as OIG for its inability to perform these roles adequately (Commission on Fiscal Accountability of the Nation's Energy Resources 1982, Minerals Management Service 1995). At the core of the problem was the structure of the revenue management function within USGS which was decentralized in its 11 regional offices. According to the Commission, USGS's failure, including its chronic inadequate collection of royalties as well as its inability to prevent oil companies from physically taking oil from the field without reporting it for tax purposes, was costing the federal government several hundred million dollars a year in lost revenue. In particular, the scientific focus of USGS was just not consistent with its mission to collect revenue and supervise leasing operations. Specifically, among its 60 recommendations, the Commission called for the creation of an independent agency focused on royalty collection and lease management and staffed with financial professionals to develop a centralized accounting system (Commission on Fiscal Accountability of the Nation's Energy Resources 1982).

This call was reinforced by the Federal Oil and Gas Royalty Management Act (FOGRMA), enacted in January 1983 as a result of a bill introduced by Representative Markey of Massachusetts in December 1981 (Congressional Research Service 1982). In it, Congress reiterated the need for the Secretary of the Interior to "establish a comprehensive inspection, collection and fiscal and production accounting and, auditing system to provide the capability to accurately determine oil and gas royalties, interest, fines, penalties, fees, deposits, and other payments owed and account for such amounts in a timely manner" (Federal Oil and Gas Royalty

Management Act of 1982 1983, Section 101). Further, FOGRMA required yearly inspections of those leases producing “significant quantities of oil or gas in any year” or having “a history of noncompliance” (Federal Oil and Gas Royalty Management Act of 1982 1983, Section 101).

Against this troubled backdrop, Secretary Watt established MMS in January 1982 through the first of a series of Secretarial Orders and Amendments during 1982 and the beginning of 1983, moving revenue collection from the Conservation Division of USGS to the new organization (Department of the Interior 2008). Later in 1982, the Secretary further transitioned all offshore pre-leasing and lease management responsibilities to MMS from BLM and USGS respectively, which, at the time, had split these duties (Department of the Interior 2008, Hogue 2010). Through his final Order and Amendment, Secretary Watt moved onshore management to BLM (Department of the Interior 2008). The end result was that BLM assumed the duties associated with onshore development, leasing, and regulation while MMS was tasked with the same functions for offshore energy as well as revenue collection for both onshore and offshore leases (Durant 1992).

Although not directly referenced in the Linowes Commission report, consolidation of offshore functions into MMS was actually in the spirit of what the Commission had been seeking (Durant 1992). In addition, GAO, which had also been investigating the performance of the minerals management program, went even further in its recommendations. In a statement before the Interior Subcommittee of the House Appropriations Committee after the initial Secretarial Order, the Special Assistant to the Comptroller General stated:

As we understand it, the responsibilities of the Minerals Management Service may eventually go beyond accounting and collecting of oil and gas royalties, and may address the entire mineral management area. We have previously recommended that Interior evaluate the need to consolidate mineral management responsibilities. Establishment of the Minerals Management Service is consistent with this recommendation (Socular 1982, p. 6).

The fact that BLM managed offshore pre-lease activities as well as initial sales while USGS maintained authority over lease management and revenue collection had created jurisdictional disputes and delays, resulting in application backlogs and facilitating the oil thefts discussed in the Commission report. Thus, it is not surprising that the House Appropriations Committee supported MMS's creation, indicating in its report,

The reorganization was the result of the underreporting of oil and gas production from Federal and Indian lands, theft of oil from those lands, and underpayment and inadequate collection of royalties owed to the United States...The bulk of the appropriation...is associated with the...evaluation of resources, regulations, and activities associated with Federal and Indian lands. These are functions formerly divided between the Geological Survey and the Bureau of Land Management. That division of function often caused problems of neglect, duplication, and turf wars. The Committee agrees with the consolidation. (Committee on Appropriations 1982, p. 40)

Even a 1983 Time magazine article—highly critical of Secretary Watt after he was forced to resign—acknowledged that his reform of “the chaotic oil-lease payment system” was one of his “several” policy changes that were “sensible” (Time Magazine 1983). In fact, at the time, the fundamental question was not why the functions were combined but rather why onshore development, leasing, and regulation were consolidated at BLM instead of MMS (Durant 1992).

To implement its dual charge to collect revenue for both onshore and offshore leasing as well as manage offshore oil and gas development, beyond centralizing some of the agency's general administrative tasks, MMS was organized specifically around these two functions from the outset (Bonora & Gallagher 2001, Minerals Management Service 1984). In particular, under the broad activity Royalty Management, later renamed Minerals Revenue Management, MMS housed its Royalty Collections, Royalty Compliance, and Systems Development subactivities (Minerals Management Service 1984). Personnel associated with these functions were collectively charged with implementing FOGPMA, which had attempted to set a course for improved oil and gas revenue collection. While it maintained field offices for audit purposes in

Dallas, Houston, and Tulsa, the bulk of Revenue Management's operations were centralized in its Lakewood office located outside of Denver in an effort to "provide efficiency and economies of scale in the financial and data collection process and to ensure consistent guidance to lessees and operators" (Minerals Management Service 1993b, p. 108).

The second function labeled Outer Continental Shelf Lands, and later renamed Offshore Energy and Minerals Management, included MMS's Resource Evaluation, Leasing and Environmental, and Regulatory programs (Minerals Management Service 1984). Although each had a different responsibility corresponding roughly to their timing in the process of developing offshore lands, these three subactivities were held tightly together by their respective roles in carrying out the Outer Continental Shelf Lands Act of 1953 (OCSLA). The OCSLA had established federal jurisdiction over submerged lands and set out basic procedures for leasing these lands (Outer Continental Shelf Lands Act 1953). The Act further described the need to balance the goals of development to support national economic and energy policy goals while providing for the protection of human, marine, and coastal environments. In fulfilling their joint charge to carry out the OCSLA, groups within Offshore Energy operated with a substantial degree of overlap, where, for example, an environmental study could support evaluation, leasing, and regulatory decisions simultaneously. Further, although resource evaluation related activities were most closely associated with planning efforts to identify areas for oil and gas development, the program was "involved in all phases of OCS program activities," even assisting "regulatory personnel to ensure that discoveries [were] developed and produced in accordance with the goals and priorities of the OCSLA" (Minerals Management Service 2004, p. 108). To the extent that federal offshore lands included the Atlantic and Pacific coasts as well as Alaska and the Gulf of Mexico, Offshore Energy maintained offices in all locations. Even so, beyond housing a number

of administrative personnel in Herndon, VA, the bulk of the core Offshore Energy staff were situated in either the New Orleans office or one of the other district offices situated along the Gulf. This reality was further intensified by the decision to close the Atlantic office following President Bush's 1990 declaration of a moratorium on drilling in the region after the Exxon Valdez oil spill (Minerals Management Service 1995).

Table 4-1 – Percentage of MMS Employees by Category in Colorado and Louisiana in September 2008

Employment Category	Colorado	Louisiana
Biological, Physical and Social Sciences	4.0%	62.5%
Engineering and Investigation	4.9%	69.3%
Accounting and Budget	56.3%	0.4%
Business and Industry	73.5%	3.7%
Administration and Technology	18.6%	31.9%
Total	27.4%	33.8%

Notes: Percentages do not sum horizontally to 100% because MMS maintained offices in other locations as well, most notably Virginia and Washington, DC. Each figure reflects the percentage of total MMS employees in that employment category who were stationed in Colorado or Louisiana in September 2008. Source: Office of Personnel Management's FedScope data.

In many ways, MMS's organizational design represented a complete reversal of what had preceded and failed before it. Rather than maintain separation between evaluation and leasing decisions and ongoing operations as was the case when BLM and USGS split these functions, at MMS, these were joined together into one broad group. In addition, although USGS located revenue collection and leasing oversight in the same office for each region, MMS maintained a firm division between the two. Moreover, the separation between the Revenue Management and Offshore Energy groups was not something that simply characterized its initial creation. As Table 4-1 above suggests, a strong correlation between geographical location and function still characterized MMS in 2008, two years before its breakup. Even using broad employment categories, science and engineering functions—associated specifically with Offshore Energy—were predominantly carried out by employees located in Louisiana. On the other hand,

accounting and business roles remained centrally focused with Revenue Management in Colorado. These figures present a stark contrast to general administration and technology which, as would be expected, was needed in both locations.

In addition to pointing out the geographical separation of the two groups at MMS, Table 4-1 further highlights how different the core functions associated with Offshore Energy and Revenue Management were. In fact, the fundamental reason that the Linowes Commission recommended the removal of the royalty function from USGS was that the “scientifically oriented” agency was never “able to supply the active sophisticated management that [was] needed” (Commission on Fiscal Accountability of the Nation’s Energy Resources 1982, p. xvi). In implementing the recommendation that properly collecting royalties required “top quality financial managers” (Socular 1982), Revenue Management built its group by employing those with accounting and audit experience. On the other hand, Offshore Energy employed individuals with science backgrounds such as oceanographers and biologists in addition to engineers and those with experience on oil and gas platforms to fill its inspector roles. Even a cursory review of recent job openings confirms the extent to which the functions of the two programs differed. As one might expect, whereas auditing and accounting positions in Lakewood required significant prior experience in accounting and a CPA or Certified Internal Auditor certificate, undergraduate and graduate degree requirements for those applying for positions on the OCS specified chemistry, engineering, biology, geology, and related fields (Bureau of Ocean Energy Management, Regulation and Enforcement 2011a, 2011b, 2011c, 2011d; Office of the Secretary of the Interior 2011a, 2011b).

Given the vast differences in functions and backgrounds between operations personnel in the two groups as well as their geographical dispersion, it is not surprising that they had difficulty

coordinating their activities to the extent to which it was required. A December 2007 report by the Subcommittee on Royalty Management—a committee appointed by the Secretary of the Interior to study minerals revenue collection following an OIG investigation of the audit and compliance program—suggests the difficulties MMS had in this regard (Subcommittee on Royalty Management 2007). In recommending improvements prospectively, the Subcommittee noted the particular complications associated with having three bureaus involved in onshore minerals revenue collection. As both the Bureau of Indian Affairs (BIA) and BLM were responsible for relaying data on onshore production to MMS’s Revenue Management group, the Committee was able to identify numerous instances where the information was either incomplete or incorrect, resulting in excess costs, delays, and errors.

However, beyond noting the need to improve coordination among the three agencies, the Committee also observed that procedures needed to be established for “intra-Bureau coordination” as well (Subcommittee on Royalty Management 2007, pp. 83, 86). In examining the systems used for sharing information between BLM and Revenue Management, the report documented that manual and paper-based transmissions between the two bureaus were “a major impediment to efficient royalty collection operations” (Subcommittee on Royalty Management 2007, pp. 21, 26). Somewhat surprisingly, the Committee also described how relaying data between Offshore Energy and Revenue Management demonstrated similar problems, as computer systems were not completely linked within MMS. The report went on to conclude, “Increased sharing of electronic information between BLM and MRM [Revenue Management], as well as between OMM [Offshore Energy] and MRM, would dramatically increase the consistency of Federal lease status and production information across these agencies” (Subcommittee on Royalty Management 2007, p. 27).

A September 2008 GAO report further documented some of the difficulties MMS was having internally coordinating efforts with respect to certain aspects of its royalty collection processes (Government Accountability Office 2008). For example, when discrepancies between company reported oil and gas volumes and BLM or Offshore Energy measurements were uncovered, the affected companies would often need to submit corrected production statements. However, after receiving the updated information, those in Offshore Energy did “not relay this information to the royalty reporting section [Revenue Management] so that staff [could] check that the appropriate royalties were paid” (Government Accountability Office 2008, p. 5). As a result, only through a reconciliation process several years later or in the case that an affected lease was selected for audit would Revenue Management be able to verify whether the royalty payment was correct or incorrect (Government Accountability Office 2008, pp. 10-11). To mitigate these coordination problems, GAO indicated that it was “making several recommendations aimed at improving [MMS’s] royalty IT system and royalty collection and verification processes” (Government Accountability Office 2008, p. 5).

Even so, the extent to which Offshore Energy and Revenue Management operated independently might be best revealed in their separation through Secretary Salazar’s aforementioned Order 3299 after the onset of the Gulf oil spill. A report submitted by Salazar to Congress on July 14, 2010, two months after his announcement of the breakup, describes both the rationale for and implementation plan associated with the Secretary’s decision to divide MMS into three organizations, the Office of Natural Resources Revenue, the Bureau of Ocean Energy Management, and the Bureau of Safety and Environmental Enforcement (Department of the Interior 2010). In planning for the transitions, the document highlights the divide between Offshore Energy and Revenue Management, noting, “The Office of Natural Resources Revenue

can be transitioned most quickly and will begin operations on October 1, 2010, with the transfer of the largely intact Minerals Revenue Management function” (Department of the Interior 2010, p. 4). On the other hand, the report explains that the “creation of the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement will be more complex. The two Bureaus will be created from a single bureau in which functions and process are tightly interconnected, making the separation complicated and demanding” (Department of the Interior 2010, p. 6). The document called for six months of planning, followed by a phased implementation which only resulted in the actual separation of the two functions in October 2011, almost a year and a half after the plan was first introduced. Even then, the recognition remained that “close program coordination” is necessary between the two organizations to “maintain a functioning and effective process” (Department of the Interior 2010, p. 11). In this way, the extent to which the evaluation, leasing, and regulatory functions, all housed in Offshore Energy, relied on each other to operate properly presented a stark contrast to the independence maintained between Offshore Energy and Revenue Management. This independence was embedded in MMS’s creation.

Managing Conflict through Organizational Design

Aligned with the general view that policy development and implementation are exceedingly complex, most modern scholars of the process caution against viewing its progression as a series of discrete and well-timed stages (Nakamura 1987, Sabatier 1999, p. 7; Sabatier & Jenkins-Smith 1993). According to these researchers, the process rarely follows a neat progression whereby, for example, policy development leads to implementation and eventually to evaluation. Rather, often these stages occur simultaneously or even in reverse. Further, each is informed by the

others throughout the policy lifecycle. For example, issues uncovered in implementation and also in evaluation will often lead to changes in policy design, which in turn may result in refinements to the implementation strategy (Browne & Wildavsky 1984, pp. 181-205, Sabatier 1986).

Such a muddled view of the policy process conforms well to the reality of the formation of MMS. As described, the political dialogue surrounding oil and gas policy in the late 1970s and early 1980s was borne out of a series of retrospective investigations rather than a reaction to a brand new set of policy concerns. Further, the remedies prescribed were focused on applying existing policies more effectively as opposed to developing new ones. In other words, at its core, the reorganization of oil and gas processes at Interior was aimed at correcting problems in policy implementation. These observations are perhaps most clearly demonstrated in the legislation that accompanied the reforms. Rather than establishing new duties for Interior, FOGPMA was primarily focused on outlining improvements that needed to be made in Interior's legacy systems and processes for collecting oil and gas revenue (Federal Oil and Gas Royalty Management Act of 1982 1983).

Thus, the policy process that led to the formation of MMS was predicated on an inspection of existing oil and gas operations rather than the development of new responsibilities, a process which ultimately led to changes in how the established policies were executed. Given this focus, the policy discussion surrounding MMS's formation provides a good opportunity to examine in greater depth issues associated with implementation of oil and gas policy. Furthermore, since Interior's remedy in 1982 included consolidating many of the associated functions at MMS—including both regulation and leasing of offshore properties as well as revenue collection for

onshore and offshore production—the case offers insights into the costs and benefits of merging potentially conflicting regulatory and non-regulatory functions.

Even so, when viewed solely from the standpoint of goal ambiguity, it is hard to understand why one should ever want to combine conflicted functions such as offshore management, regulation, and oil and gas revenue collection in a single agency. As the literature has aptly demonstrated, the cost of imprecise and disparate goals is relatively poor organizational performance overall (Chun & Rainey 2005a, Drucker 1980). Furthermore, these insights are supported by the results in Chapter 3 which show that goal clarity improves goal performance. Not only does combining tasks with conflicting goals lead to confusion among agency personnel (Locke & Latham 1990), such arrangements also encourage agencies to subvert certain tasks for others (Biber 2009, Wilson 1989) as is alleged with MMS.

Given the advantages of splitting incompatible functions, it is logical to conclude that the dysfunctional designs which do combine such tasks must be borne out of the political process. In other words, politics are to blame for the conflicted regulatory agencies observed in the world because the associated procedures and compromises produce the conditions for inefficient organizational structures (Moe 1989, 1990, Olson 1982, pp. 41-47). If politics could be removed from the policy decision-making process to encourage a greater focus on performance, this viewpoint would advise against consolidating tasks with competing goals in a single agency. Moreover, as the literature suggests, when agencies which combine functions do exist, dividing the tasks associated with the divergent goals among multiple organizations—where feasible politically—would appear the appropriate remedy (Biber 2009, Dewatripont et al. 1999, Dixit 2002, Wilson 1989).

The MMS case is therefore significant because it presents an example which highlights the role of a second factor—coordination—which can help explain the existence of multiple-purpose regulatory agencies. Although considered more generally in investigations of organizational structure (see, e.g., Simon 1976, Thompson 1967), this factor is typically absent in discussions of agency goal conflicts. However, given its applicability even to a case which has so universally focused attention on goal discord underscores its importance. Incorporating a role for task coordination suggests that when we observe regulators saddled with conflicting goals, we should neither assume that politics produced the inefficient structure nor that the structure is even inefficient at all. Applied to the creation of MMS, consolidating offshore oil and gas management functions then was not necessarily just the result of a dysfunctional political process. Rather, the organization of Offshore Energy reflected a premium placed on task coordination, a premium predicated on the salient failure of BLM and USGS to achieve such harmonization previously. However, to the extent that joining these functions did produce conflict and confusion as alleged, this new structure would sacrifice the organizational separation needed to ensure that neither the regulatory nor the development function would be neglected. Analogously, structuring MMS such that Offshore Energy and Revenue Management remained firmly divided was an attempt to avoid repeating the experience of its predecessor USGS, which subverted its revenue management charge by integrating it into its scientifically-oriented regional offices. Mitigating conflict between the goals of revenue collection and environmental protection and safety thus did not demand that the functions be placed in different agencies. Rather, as described in greater detail below, it was achieved within MMS by introducing greater separation between the groups than was present at USGS. Of course, MMS's division of revenue collection and offshore management was not without cost as documented in both the

December 2007 Subcommittee on Royalty Management and September 2008 GAO reports (Government Accountability Office 2008, Subcommittee on Royalty Management 2007). These reports revealed that Revenue Management and Offshore Energy had difficulty synchronizing their activities to the extent necessary.

In addition to illustrating the tradeoff between goal conflict and task coordination, examining the nuances of the creation and development of MMS has implications for the cross-sectional results from Chapters 2 and 3. These results presented strong evidence that multiple-purpose regulators perform relatively poorly on average. They also demonstrated that the poor performance could not be explained by solely appealing to the tendency of these agencies to exhibit greater goal ambiguity. The tradeoff presented by MMS reveals one possibility why. Like MMS, multiple-purpose regulators in general may perform worse not only because of goal ambiguity and conflict, but also because of the importance of task coordination to these agencies. Stated differently, holding constant the extent to which employees know how their tasks relate to agency goals, one might still expect such agencies to achieve relatively less because they require extensive coordination of different functions to achieve those same goals. Organizational arrangements—such as firmly dividing the tasks that might conflict—to help with goal discord would then simultaneously increase the difficulties inherent in coordinating these same tasks when needed.

Moreover, the tradeoff revealed through MMS's creation is also important for evaluating Interior's order to divide MMS into three entities. Because it returns the offshore energy development functions to a structure which closely resembles the heavily criticized system prior to MMS's creation, the benefits of doing so must be weighed against the historically demonstrated failings of that structure. More formally dividing the revenue collection and

offshore operations functions by creating separate bureaus can be expected to expose offshore royalty collection to the same difficulties already evident with onshore royalty collection, as displayed through the interactions of MMS, BLM, and BIA. These problems may thus exacerbate the less extensive coordination issues already evident within MMS. As the December 2007 Subcommittee on Royalty Management report suggests, despite the problems within MMS, relative to onshore royalty management, “Coordination of activities associated with managing offshore oil and gas leases is more straightforward because only a single bureau is involved” (Subcommittee on Royalty Management 2007, p. 82). As a result, the Subcommittee as well as GAO recommended computer system enhancements and more formal organizational structures to facilitate improved intra and inter agency coordination (Government Accountability Office 2008, Subcommittee on Royalty Management 2007).

Finally, such a revelation also underscores the importance of carefully evaluating the extent to which goal conflict at MMS played a prominent role in the *Deepwater Horizon* tragedy. In addition to the costs in terms of financial resources directed to and employee dislocations associated with implementing the reorganization, the demonstrated problems in coordinating the activities of multiple bureaus accentuate the importance that the benefits of increased independence, particularly in regulatory oversight, are real. Given these costs, it seems that one should be reasonably confident that goal conflict precipitated MMS’s regulatory laxity, that this causal mechanism played an important role in the oil spill, and that the remedy will solve the problem. In the remainder of this chapter, these issues are further examined in the context of the interplay between MMS’s revenue collection and regulatory functions.

Congressional Oversight and Appropriations

The Department of the Interior's 1982 reorganization which created MMS appeared on the surface to divert political attention away from royalty management for a short period. In fact, Revenue Management was not the subject of a single oversight hearing independent of those associated with setting MMS's budget in 1983 and 1984. In contrast, Offshore Energy was the focus of at least 12 congressional hearings in which personnel from MMS appeared during that same two year span. The issues associated with the hearings ranged from considering amendments to the Coastal Zone Management Act to ensure federal agencies acted in ways consistent with state coastal zone management plans to evaluating the potential environmental impacts of offshore production in Georges Bank, located in the North Atlantic between Cape Cod and Nova Scotia (Committee on Commerce, Science, and Transportation 1984, Subcommittee on Oversight and Investigations of the Committee on the Interior and Insular Affairs 1984). In addition, during this same period, the House Committee on Merchant Marine and Fisheries held a series of hearings on offshore regulatory issues. These included reviewing procedures for emergency evacuations as well as discussing safety and training requirements for offshore drilling rigs (Subcommittee on Panama Canal/Outer Continental Shelf of the Committee on Merchant Marine and Fisheries 1983, 1984).

However, the apparent congressional focus on Offshore Energy veiled the investigations by GAO and OIG that were already in process at the time. By April 1985, when MMS appeared in front of the House Committee on Government Operations, Revenue Management was already under intense scrutiny for its perceived inadequate performance in collecting and disseminating royalties to states as well as Indian tribes and individuals (Subcommittee of the Committee on Government Operations 1985). In particular, a congressional inquiry had revealed numerous

examples where Revenue Management—which also maintained responsibility for collecting payments from oil and gas production on Indian lands and distributing those monies appropriately—either completely missed making payments to Indians or made them late and inaccurately. The evidence further revealed the extent to which MMS was unresponsive to BIA requests for individual account audits, a task which the Compliance group within Revenue Management was mandated to do. In one case that later prompted affected Indians to camp outside of BIA’s Anadarko, Oklahoma office in protest, BIA had requested Revenue Management to perform reviews of 11 individual accounts based on land holder complaints. By the time of the hearing seventeen months later, only three reviews had been completed, revealing \$59,000 in additional monies owed to the individual Indian land owners (Subcommittee of the Committee on Government Operations 1985). The remaining eight reviews were only initiated after the congressional investigation impelled MMS officials to do so. In its written response to a question about the delay, Revenue Management admitted that it was “an obvious case of something ‘falling through the cracks.’ The Anadarko request was lost in our Lakewood office for almost a year” (Subcommittee of the Committee on Government Operations 1985, p. 117).

By this time, these and other collection and dissemination problems identified by GAO and OIG had already led to numerous reforms within Revenue Management (Subcommittee of the Committee on Government Operations 1985, pp. 84-85). The changes included moving the head of Revenue Management from Washington, DC to Lakewood, further centralizing the revenue functions in that office. In addition, two committees were established in response—one would include Indian representation and advise the Secretary of the Interior on revenue improvement initiatives and another would be created to improve coordination between MMS, BIA, and BLM in carrying out onshore royalty collection and distribution. The investigations also identified the

need to acquire a new mainframe computer system as well as install remote terminals to provide Indian tribes and states with greater data access.

However, these investigations would turn out to represent only the beginning of a series of congressional inquiries into the activities of Revenue Management over the next 25 years. Although the actual volume of hearings focused on revenue collection was not noticeably different from the corresponding numbers associated with oversight of Offshore Energy, the tone of the inquiries was. For example, as Table 4-2 below reflects, many hearings held between 1986 and 1993 emphasized environmental and regulatory issues related to oil and gas operations on the OCS. Much of the attention was driven by the Exxon Valdez oil spill in March 1989—an accident in which an oil tanker as opposed to a platform or drill ship had deposited over 250,000 barrels of oil into the waters off the southern coast of Alaska (Skinner & Reilly 1989). As a result, the Coast Guard and not MMS was the primary government agency with regulatory authority (Skinner & Reilly 1989, Subcommittee on Water, Power and Offshore Energy Resources of the Committee on Interior and Insular Affairs 1989). Offshore Energy did participate in the cleanup effort and received both regulatory authority to promulgate rules governing financial responsibility for oil spills as well as greater budgetary authority to conduct related research (Committee on Energy and Natural Resources 1989; Minerals Management Service 1990, pp. 36-37; Minerals Management Service 1991, pp. 81-83). Even so, the hearings were not driven by perceived faults in Offshore Energy’s performance.

In contrast, in 1989, officials from Revenue Management again testified in front of Congress about additional allegations of deficiencies in the agency’s efforts to collect royalties on behalf of Indian tribes and individuals (Special Committee on Investigations of the Select Committee on Indian Affairs 1989). Further, in the previous year, MMS officials had appeared before the

Senate Committee on Energy and Natural Resources to discuss the findings of six DOI audits of revenue collections from 1986 through 1988. To open that hearing, Subcommittee Chairman Melcher declared, “As a result of the Linowes Commission recommendations in 1982, Congress passed...the Federal Oil and Gas Management Act...Unfortunately, progress in implementing those recommendations has been slow. To date, action by the Department [of the Interior] falls far short of adequately carrying out the requirements of the law” (Subcommittee on Mineral Resources Development and Production of the Committee on Energy and Natural Resources 1988, pp. 1-2).

Table 4-2 – Subject Matter of Congressional Hearings in Which MMS Personnel Testified by Function (1982 – 2009)

Period	Evaluation	Leasing	Environment	Regulation	Revenue	Total
1982-1985	14	12	14	5	8	25
1986-1989	7	6	12	10	6	22
1990-1993	5	7	12	6	5	20
1994-1997	4	0	3	2	9	16
1998-2001	2	3	2	0	5	9
2002-2005	6	2	3	0	1	8
2006-2009	10	9	8	0	10	18

Notes: Does not include budget hearings. The sum of subject counts can exceed the total because hearings can involve multiple functions. Evaluation refers to identifying areas for oil and gas exploration whereas leasing refers to leasing properties to oil and gas producers. Source: Searches in LexisNexis Congressional database of congressional hearings. To categorize the subject matter of the hearings, each hearing’s title and summary description were examined. In some cases where clarification was required, the testimony was reviewed as well.

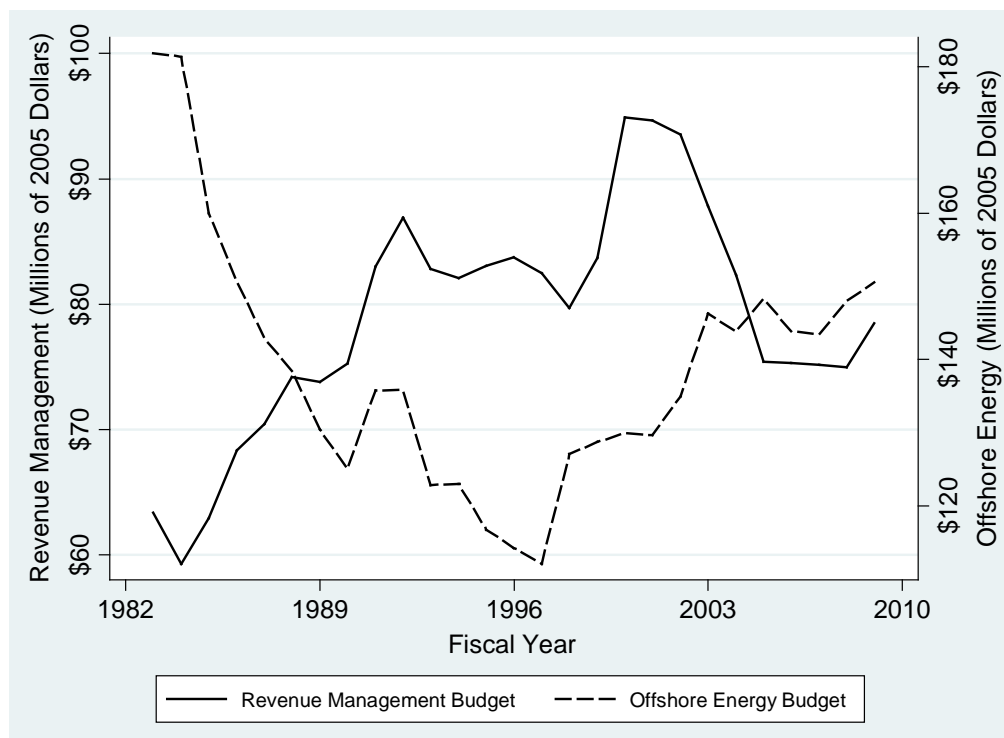
In addition to the individual hearings, even a cursory review of GAO reports over the period reveals the extent to which congressional criticism of MMS remained squarely focused on revenue collection relative to offshore energy management. During the four year period from 1982 to 1985, royalties were the primary focus of three reports, offshore energy was the subject of nine, and one covered both. In contrast, over the next 24 years ending in 2009, in addition to eight reports which included a discussion of both groups, Revenue Management was GAO’s main target in 34 reports relative to only seven for Offshore Energy, almost a five to one ratio.

Further, the titles of the reports confirm GAO's dissatisfaction with the agency's revenue collection efforts. Examples include a 1992 report that GAO titled "Royalty Compliance: Improvements Made in Interior's Audit Strategy, But More Are Needed" as well as a 2007 report with the heading "Royalties Collection: Ongoing Problems with Interior's Efforts to Ensure A Fair Return for Taxpayers Require Attention."

Similar to the first hearing on Indian royalties in 1985, subsequent investigations were often accompanied by reform efforts by Revenue Management, including reorganizations. From 1992 through 2000, the group underwent two major and at least three minor reorganizations. In particular, with congressional approval in October 1992, Revenue Management, which had been previously organized around the functions Collections, Compliance, and Systems, completed the first of these major restructurings by dividing its work units (Minerals Management Service 1993b, p. 7). Collections were folded into Operations and Compliance; some portions of Compliance moved to Audit; and Systems was divided into parts that were moved into each of the new functions, Audit, Operations, and Compliance (Minerals Management Service 1993b, pp. 108-109). Even so, by spring of 1994, these three units were reorganized into two: Valuation and Operations as well as Compliance (Minerals Management Service 1995, p. 30). In addition, around the same time, Revenue Management opened offices in Oklahoma and New Mexico to manage Indian royalty issues (Minerals Management Service 1995, p. 7). Later, with the 1996 Appropriations Bill, Congress directed Revenue Management to centralize administrative support functions such as budget reporting in its Program Services Office (Minerals Management Service 1996, p. 32, 139). In the following fiscal year, Revenue Management again revised its structure, centralizing Valuation and Operations with Compliance under one Deputy Director while at the same time combining two subdivisions and renaming

another (Minerals Management 1997, p. 119). Finally, effective October 2000, Congress approved another major restructuring which created the Revenue and Operations as well as Compliance and Asset Management subactivities to better reflect “extensive changes to organizations and functional processes resulting from [Revenue Management’s] program-wide reengineering effort that began in FY 1996” (Minerals Management Service 2001, p. 22).

Figure 4-1 – MMS’s Offshore Energy and Revenue Management Funding Levels (1983 – 2009)



Notes: Actual budget amounts in millions of 2005 dollars. Does not include general administrative funding for tasks such as administrative support and executive direction. Source: Minerals Management Service Budget Justifications for fiscal years 1985 through 2011.

Somewhat counterintuitively, although Revenue Management was being scrutinized, this critical attention was not accompanied by any overt actions by Congress or the president to discipline the group through budget cuts. In fact, Figure 4-1 above, which shows MMS’s real budget by program over time, suggests exactly the opposite was occurring during the period. From fiscal years 1983 through 1992, Revenue Management’s real budget increased by 37%.

Although it then stagnated and decreased somewhat through 1999, as the figure describes, this was followed by another dramatic increase from 2000 through 2002. In all, from 1983 to 2002, MMS saw its appropriations associated with its Revenue Management group increase by almost 50%. While this period was followed by a decline associated with the completion of projects to develop computer systems to support both the redesign “of virtually every aspect of [Revenue Management] operations” as well as the newly formed RIK program, throughout the bulk of the period, Royalty Management enjoyed substantial budget growth (Minerals Management Service 2002, p. 4; Minerals Management Service 2003, p. 219).

In direct contrast, during most of the same period, Offshore Energy’s budget was moving in the opposite direction. With the exception of a brief period in 1991 and 1992 where appropriations for MMS’s Offshore Energy functions increased in response to heightened environmental concerns associated with Exxon Valdez, the group’s budget showed a steady decline through the mid-1990s. In total, the change amounted to a 38% decrease during the 15 year period ending in 1997. Further, these reductions, while more concentrated in the Resource Evaluation and Leasing and Environmental programs within Offshore Energy, significantly impacted the Regulatory program as well which experienced a 24% drop in congressional appropriations during the same timeframe. The declines were also associated with reductions in headcount. Although Offshore Energy employed almost 1,100 individuals in 1983, by 1997, staffing had been reduced by 22% to 853 (Minerals Management Service 1984, Minerals Management Service 1998). On the other hand, Revenue Management increased its personnel by 48% from 466 to 691 over the same interval.

Closer inspection of the changes in Revenue Management appropriations relative to those associated with Offshore Energy reveals further evidence that Congress did not view budgetary

decisions as a tool to discipline the perceived inadequacies in the former group's performance. Table 4-3 below shows a difference in means test for relative changes in current and next fiscal year budgets associated with the Revenue Management group relative to the Offshore Energy group. The row Did Appear Before the Committee references years in which MMS appeared before the House Committee on Oversight and Government Reform (formerly the Committee on Government Operations) in response to revenue management issues, and Did Not Appear Before the Committee references years in which the agency did not appear.

Table 4-3 – Relative Budget Changes and Revenue Management Appearances before the House Committee on Oversight and Government Reform (1984 – 2009)

Category	Observations	Relative Budget Change (\$1,000)	Standard Error	Statistic
Did Appear before Committee	6	9,352.23	3,800.20	
Did Not Appear before Committee	20	-484.28	1,823.02	
Combined	26	1,785.69	1,815.62	
Difference Between Did & Did Not		9,836.50	3,913.09	
t-statistic				2.5137
p-value for Ha: Did \neq Did Not				0.0191
p-value for Ha: Did > Did Not				0.0095
p-value for Ha: Did Not > Did				0.9905

Notes: Relative Budget Change represents the difference between Revenue Management and Offshore Energy budget increases for any given year. Figures are in thousands of 2005 dollars. Did Appear before Committee represents budget years in which MMS personnel appeared before the House Committee on Oversight and Government Reform to discuss revenue management issues. The computation of Relative Budget Change includes both the budget in the year in which MMS personnel appeared as well as the budget in the subsequent year. 2006 committee appearances are not included as Did Appear because these involved leasing and revenue functions. However, their inclusion does not materially change the results. Sources: Minerals Management Service Budget Justifications for fiscal years 1985 through 2011 and searches in LexisNexis Congressional database of congressional hearings.

As the table shows, in those years in which it did appear, Revenue Management enjoyed budget increases in that and the following year that were over \$9.3 million greater per year on average than the corresponding changes in appropriations targeted to Offshore Energy. In contrast, in those years in which MMS was not called by Oversight and Government Reform to testify regarding revenue problems, the relative increase in Revenue Management appropriations

was not significantly different from zero. In other words, instead of lowering its budget in response to the problems it was having, Congress actually appears to have shifted more dollars to Revenue Management from Offshore Energy in an attempt to supply the revenue group with resources to deal with these problems. This observation is further bolstered by examining budget changes associated with the aforementioned major reorganizations of Revenue Management effective early in fiscal years 1993 and 2001. In the two fiscal years leading to the completion of each of these restructurings, Revenue Management's budget increased by an average of \$3.3 million more than Offshore Energy's budget. In the years in between, the revenue group enjoyed relative increases averaging only \$259,000 more than Offshore Energy.

Beyond shifting MMS's budget between its two functions, during the 1990s Congress also made the decision to allow MMS to increase its rental rates—or payments on non-producing leases—by \$2 per acre on each of its lease sales for the express purpose of offsetting the costs of developing a new computer system for its Offshore Energy group (Minerals Management Service 1995, p. 109). In addition to not applying to royalty payments on properties actually producing oil and gas, the maximum aggregate amount that MMS could use was determined by Congress through the budgeting process (Subcommittee on Interior Appropriations, Committee on Appropriations 1995, p. 508). Although the revenue offsets in budget years 1994 through 1996 were targeted specifically to the creation of this new system and related information management functions (Subcommittee on Interior Appropriations, Committee on Appropriations 1995, pp. 508-509), in 1997 Congress authorized MMS to use the rental rate increase to partially offset costs associated with running its core Resource Evaluation, Leasing and Environment, and Regulatory programs (Minerals Management Service 1996, p. 107; Minerals Management Service 1997, p. 108). Not coincidentally, as shown in Figure 4-1 above, 1997 also represented

the beginning of a reversal in the previous downward trend in Offshore Energy's budget. Over the next twelve years, the group's real budget increased by 34%, ending in 2009 at the level it last achieved in 1986 (Minerals Management Service 2010). Furthermore, the growth was shared by all functions, ranging from a 50% budget increase for Leasing and Environment to 28% growth for the Regulatory program. Finally, although total personnel did not increase during this period, the relative changes in budgets did enable Offshore Energy to stem the previous decline, ending in 2009 with roughly the same number of civil servants as it had in 1997 (Minerals Management Service 2010).

Table 4-4 – OLS Regression of Offshore Energy Budget on Revenue Management Budget and Congressional Decision to Allow Rental Budget Offsets (1983 – 2009)

Variable	Coefficient	Standard Error
Revenue Management Budget	-2.095***	0.338
Revenue Management x Authorization	1.442**	0.538
Congressional Authorization	-105.364**	43.180
Constant	296.954***	25.510
F-statistic (3,23)	13.73	
R-squared	0.6416	
Adjusted R-squared	0.5949	

Notes: The dependent variable is Offshore Energy's budget in a given fiscal year. All budget figures are shown in millions of 2005 dollars. Congressional Authorization represents the 1997 decision by Congress to allow MMS to use a \$2 per acre rental rate increase on its lease sales to partially fund the core functions of its Offshore Energy group. Revenue Management x Authorization represents the interaction between the Revenue Management Budget and Congressional Authorization variables. Tests of significance are tests of difference from zero. Significance levels: *** implies $p < 0.01$; ** implies $p < 0.05$; * implies $p < 0.10$. Regressions substituting funding for each of Offshore Energy's core functions—Resource Evaluation, Leasing and Environment, and Regulatory—as the dependent variable reveal similar results. Sources: U.S. Department of the Interior Budget Justifications for fiscal years 1985 through 2011.

The observations of this section are further summarized in Table 4-4 above which displays the results of a regression of the level of MMS's Offshore Energy budget from 1983 through 2009 on the level of Revenue Management's budget in the same fiscal year, Congress' decision to allow MMS to use rental receipts to offset its Offshore Energy budget, and the interaction of the two explanatory variables. As the coefficient on the Revenue Management budget variable

confirms, throughout MMS's history, Revenue Management and Offshore Energy engaged in something akin to a zero sum game where increases in one area were often accompanied by declines in the other. In other words, the increases in dollars directed to Revenue Management had a statistically significant and numerically important negative effect on those directed to MMS's energy management efforts. Further, as the coefficient on the interaction suggests, this relationship was only weakened after Congress began authorizing MMS to offset its Offshore Energy budget through increases in oil and gas leasing rental rates. Finally, combining the coefficient on the interaction term with that for the congressional decision to broadly allow rental offsets indicates that the independent effect of the authorization by Congress was to increase the average Offshore Energy budget by a little over \$14 million per year. Thus, the regression supports earlier observations that: (1) budgets for Revenue Management and Offshore Energy moved in opposite directions; (2) this effect was moderated once Congress began to allow MMS to use rental receipts; and (3) this same congressional decision at least partially contributed to the general increases in Offshore Energy's funding beginning in the late 1990s.

Evaluating Revenue Management's Impact on Regulation

As described, general opinion suggests that MMS's dual functions as revenue collector and regulator of offshore development led it to neglect the latter, an effect intensified by the authority granted by Congress to Offshore Energy to offset its budget with a portion of those tax dollars it collected. Furthermore, I have shown that from the perspective of the scholarship on goal ambiguity, such evaluations appear logical. Given that revenues were generated from oil and gas leasing and resulting production, steadfast regulatory oversight which would impede production would seem to simultaneously reduce revenue collected. In addition, as many scholars have

noted, conflicts such as this can lead an agency to focus on one task to the detriment of the other. In the case of MMS, critics assert that the agency chose to subvert its role as regulator to focus on collecting taxes.

However, when viewed within the context of the historical organizational development of MMS, such claims are less convincing. At least at the operational level, the vast separation between Revenue Management and Offshore Energy with regard to geography, functions, and systems complicates any claim that inspectors, for example, considered rental collection goals as they performed their jobs. Instead of operating as a single entity, MMS's dual structure reflected a desire to develop an independent and cohesive revenue management group in Colorado, where some of the function's most senior officials resided. Further, the December 2007 Subcommittee on Royalty Management and September 2008 GAO reports document that—by not relaying production data received from oil and gas companies—Offshore Energy made auditing oil and gas tax submissions more difficult. Thus, instead of assisting tax collection as is claimed, if anything, Offshore Energy was actually impeding the Royalty Management group's ability to accomplish its mission.

Even so, the evidence presented at the operational level does not necessarily rule out a willingness to undermine regulation among MMS's highest ranking officials where simultaneous involvement in the two functions was also more likely. Regardless, the evidence relied upon by critics to allege that conflict encouraged regulatory neglect within Offshore Energy is not focused on these employees. Rather, it is focused on both the inappropriate gifts from industry representatives to employees in the Lake Charles, LA office as well as the allegations by scientists that they did not exert enough influence over leasing decisions (Eilperin 2010, Office of the Inspector General 2010b, Urbina 2010b). To the extent unethical behavior was uncovered

at higher levels within MMS, it was associated with Royalty Management, and, in particular, a situation where three employees orchestrated a contracting arrangement which awarded consulting work to two of them after they retired (Office of the Inspector General 2008a). Furthermore, congressional decisions related to funding the agency—especially before Congress authorized MMS to offset its appropriations by increasing the rental rates of oil and gas companies—highlight the extent to which gains to Revenue Management were offset by budget reductions for Offshore Energy. If anything, this might more plausibly suggest that a competition existed between the two for resources, rather than a joint effort to maximize revenue receipts.

Moreover, these same appropriations data can be used to shed further light on the extent to which the congressional decision to allow rental revenue offsets was a negative development, only serving to exacerbate conflict within MMS. The evidence that Offshore Energy in general and the Regulatory program in particular began to experience a reversal of their freefalling budgets once Congress allowed MMS to use the rental rate increase to broadly offset budgetary demands suggests that the effects of this change are somewhat more complicated. Other factors described in the next chapter including increased political and industry interest in deep water drilling which occurred around the same time might have also been important in bolstering Offshore Energy's funding. Regardless, a general consensus exists even among MMS's critics that the agency was severely understaffed (Eilperin & Higham 2010, Flournoy et al. 2010, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011). Therefore, expansion of resources, which is strongly associated with the congressional authorization and which stemmed the massive reductions in Offshore Energy personnel occurring through the mid-1990s, was a positive effect associated with what most regard as a

development that precipitated MMS's failure. Especially when one considers how operationally separated revenue collection and offshore development were, an argument could be made that the practical result of allowing such an arrangement in a world of contracting appropriations vastly outweighed any perceived negative consequences associated with it.

Additionally, the congressional authorization only applied to rental receipts which, as described, were industry payments on non-producing leases. Thus, even if Offshore Energy did consider oil and gas revenue receipts in its regulatory decision making, it would not apply to producing leases which were the primary target of ongoing oversight, thus dampening any direct connection between lax oversight and congressional approval of the tax increase. Moreover, in theory, such an arrangement should have caused Offshore Energy to become a more—and not less—stringent regulator. By denying lessees permits to explore for and produce oil and gas on currently non-producing leases, Offshore Energy would in effect be protecting its funding offset since the revenue source was only derived from leases not yet yielding oil and gas. On the other hand, if it acted as lax regulator, readily approving permits to drill, Offshore Energy would be eliminating the source of revenue thought to be prompting it to be lax in the first place.

Equally as important, Congress—and not MMS—determined the gross level of the offset. As a result, the degree to which the agency would reap the benefits of the rental increase was not directly influenced by even its own leasing decisions. Because congressional budgetary decisions established the authorized level in advance, to the extent that level was set below the expected increase in rental receipts, MMS's leasing decisions on the margin would not affect its funding. Given that even after netting out its offset, in fiscal year 1998 for example, MMS was expected to return \$27 million in increased rental payments to the general Treasury (Minerals Management Service 1998, p. 92), one may wonder how the authorization could have had any

impact on Offshore Energy decisions. Not only did the congressional offset have very little to do with its oversight function, the inability of MMS to control the funding level blurs any causal connection between the offset and its leasing decisions.

However, when viewed within the context of the pattern of congressional oversight of MMS over its almost 30 years, even the logic associated with the core argument that the competing revenue collection and regulatory tasks caused MMS to neglect its latter function is weakened. Recalling the evidence garnered from oversight hearings and GAO reports, the vast majority of MMS's problems were associated with its function as oil and gas revenue collector. Offshore Energy, on the other hand, received little critical attention from Congress throughout most of its existence as part of MMS. Instead, as described in detail in the next chapter, until 2010, the group was widely regarded as successfully performing its functions as demonstrated through the numerous awards and general approval it received politically. Therefore, to the extent that MMS was struggling, it was struggling in the opposite way relative to the prediction of a theory that suggests MMS's conflicting revenue collection and regulatory goals encouraged regulatory neglect. In such an account, MMS's subversion of its function as OCS steward to succeed as a revenue collector would be expected to show some outward signs that this was occurring. Stated differently, one should have expected to see indications that MMS's regulatory structure was being compromised to promote its efficiently performing revenue functions—not the reverse.

Combining these data points, a story that MMS's failure as a regulator was precipitated by its initial organizational structure which linked offshore oversight and revenue collection is less likely. This is not to say that such a hypothesis is completely without merit or impossible given the reality of the environment surrounding MMS as well as the support from the academic literature that task subversion can occur under broadly similar conditions. Rather, the evidence

demonstrates that we should remain guarded to assertions that the initial decision to consolidate offshore regulatory functions with revenue collection was a primary driver for MMS's behavior, bound to eventually lead to something like the *Deepwater Horizon* disaster. Given that such thinking triggered an organizational solution through Order 3299 that has been shown to have significant costs of its own, this study merely suggests that it can be important to consider the complete set of evidence before advancing with a radical policy shift such as the decision to eliminate MMS.

Conclusion

In this chapter, I have shown that the organizational structure of a multiple-purpose regulator such as MMS can have important implications for how we interpret outward signs of its behavior. Common discourse has suggested that MMS presented a clear case where merging two conflicting purposes, revenue collection and oil and gas regulatory oversight, led to the subversion of the latter in an effort to overcome these organizational deficiencies (Flournoy et al. 2010, Forbis 2011, Honigsberg 2011). Within the context of the academic scholarship on goal ambiguity and the policy process, this view of MMS seems to follow logically. However, a review of the organizational divide between Revenue Management and Offshore Energy as well as the historical patterns of congressional oversight and appropriations decisions has revealed several inconsistencies with the hypothesis that consolidating these functions led to MMS's subversion of its regulatory goals. This division between the two groups has simultaneously revealed the important role that internal design can play in mitigating potential conflicts. Combining tasks with conflicting goals in one agency may not always lead to subversion if the organization is structured with enough separation between them. Given the historical

circumstances surrounding the creation of MMS, this insight should not surprise us. The fact that tax collection had little impact on regulation was a function of MMS's initial construction. The organizational structure chosen—which created an independent tax collector—was an attempt to keep revenue management from being subverted as it was at USGS.

The analysis has also highlighted the importance of a second factor, task coordination, which should be considered when examining an agency that appears to be impeded by conflicting goals. In many ways, MMS was an agency which, while it existed, represented the two extremes of organizational design simultaneously. At the one limit, the integrated resource evaluation, leasing, and regulatory functions of Offshore Energy reversed the previous division of these tasks between BLM and USGS, a separation which encouraged the agencies at various points to duplicate efforts as well as simultaneously overlook other activities (Committee on Appropriations 1982). Offshore Energy's structure placed less emphasis on potential goal conflicts to facilitate coordination, which at the time was the more salient issue.

At the other limit, the division geographically and functionally between Revenue Management and Offshore Energy represented a sharp contrast to its predecessor—the integrated USGS—which failed to “supply the active sophisticated management” necessary to overcome its scientific bias, resulting in a chronic failure to adequately collect royalties (Commission on Fiscal Accountability of the Nation's Energy Resources 1982, p. xvi). Thus, in order to encourage revenue collection as a viable goal, MMS's Revenue Management group was created to operate independently of Offshore Energy, thereby alleviating the concern at the time that the latter may overshadow the former. However, while MMS's separation of its offshore oil and gas management operations from its revenue collection functions reduced the potential for goal subversion, it did so at the expense of the agency's ability to synchronize the tasks where

necessary. Citing coordination problems between BLM, BIA, and MMS for onshore revenue collection as well as between MMS's Offshore Energy and Revenue Management missions for offshore collection, the December 2007 report of the Subcommittee on Royalty Management stressed the need for greater—not less—intra and inter bureau coordination by creating cross organizational teams and syncing computer systems (Subcommittee on Royalty Management 2007).

Finally, although primarily focused on MMS's internal structure, the analysis in this chapter has also hinted at the importance of considering external political forces in order to explain behavior at MMS. Patterns associated with congressional oversight and appropriations—including the decision to allow MMS to offset its appropriations with rental receipts—have yielded important evidence to evaluate the extent to which MMS subverted offshore oversight for revenue collection. Much research in political science, focused on the political control of administrative agencies, has shown that political actors also can exert significant influence over agency decision making (see Carrigan & Coglianese 2011 for a review of this literature). In the next chapter, I focus on these external forces as they relate to the second set of goal conflicts at MMS, that between oil and gas development and regulation within Offshore Energy. In particular, I show that presidential directives, congressional lawmaking, and public preferences all need to be closely considered in any serious evaluation of whether MMS's conflicts impeded its ability to fulfill its regulatory oversight and oil and gas development functions. Moreover, these political influences can also help us to assign an appropriate role to MMS's goal conflicts in explaining the causes of the disastrous Gulf oil spill.

Chapter 5

Politics and Offshore Oil and Gas Policy

Government agencies are inextricably tied to the political environment in which they reside. Certainly, these organizations can exploit their superior access to information and relative expertise to gain some degree of independence from their political principals—namely the president, Congress, and the courts (Bawn 1995, Epstein & O’Halloran 1994, Huber & Shipan 2002). Further, the mere presence of multiple political superiors with competing agendas can limit the collective ability of these actors to control a government agency (Dixit 1997, Moe 1984). The compromise that results may allow these organizations to at times be able to implement their own preferences (Miller 2005, Wilson 1989). Still, as Daniel Carpenter demonstrates in contrasting the historical development of the U.S. Department of Agriculture and the Department of the Interior, true bureaucratic autonomy requires the simultaneous presence of several conditions (2001). Conditional on the agency and its political principals holding diverging preferences, agency autonomy is fashioned through the simultaneous ability of the organization to develop truly unique capabilities, communicate those capabilities, and build its reputation through a diverse coalition of politically powerful interests that makes it impossible for politicians to raise opposition (Carpenter 2001, 2010). Even to the extent the agency is able to achieve all of the criteria required for autonomy, it must nevertheless do so by directly controlling its political environment.

Independent agencies—which are traditionally thought to be free of presidential influence since administrators are appointed to fixed terms, are not easily removed, and do not have their decisions subject to review—still answer directly to Congress. Moreover, in practice, the Executive Office still retains subtle yet effective tools to influence decision making at these

agencies (Moe 1982). They include the role that the Department of Justice plays in overseeing the agency's regulatory enforcement program as well as the fact that commission chairmen typically resign at the beginning of new presidential administrations, thereby allowing presidents to fill even independent agencies with their own supporters.

As a result, although agencies can exhibit substantial independence from their political overseers in certain situations (Eisner & Meier 1990, Niskanen 1971, Ogul & Rockman 1990, Ringquist 1995, Spence 1997), the extent to which officials at these organizations can act on their own inclinations is still greatly determined by the political environment surrounding the agency. Moreover, this environment includes room for other actors besides simply politicians. As the extensive literature on capture so aptly demonstrates, interest groups can exert substantial influence over agencies as well (Bernstein 1955, Carpenter & Moss forthcoming, Peltzman 1976, Stigler 1971). Although sometimes overlooked, the preferences of the general public—particularly when agency employees remain faithful to their missions—can certainly also help determine how these organizations define and fulfill their goals (Brehm & Gates 1997). Thus, agency personnel are subject to a variety of forces external to their organizations that help determine what they work on and how they choose to go about doing their jobs. As William Gormley and Steven Balla explain, “Agencies do not operate in a vacuum, but rather in an environment where public decisions can be, and often are, made in alternative venues” (2007, p. 57).

Political Pressure and Offshore Energy Goal Conflict

Despite its importance, to this point in the analysis, political context has occupied a secondary role in explaining behavior and performance of multiple-purpose regulatory agencies.

To be sure, external political forces have certainly not been entirely absent. The data on agency goal performance utilized in Chapters 2 and 3 to show both that multiple-purpose regulators perform worse and the extent to which goal ambiguity can explain this finding are derived from OMB PART scores. OMB, of course, is part of the Executive Office of the President and, in addition to reviewing proposed executive agency regulatory rules prior to their issuance, aids the president in developing and implementing the federal budget (Office of Management and Budget 2011). Furthermore, the analysis itself in Chapters 2 and 3 demonstrates the important role that agency political preferences play in explaining relative performance. Those agencies with more conservative views were also, not surprisingly, more likely to receive higher PART scores from President Bush's OMB.

Political forces play prominently in the study of the origin and development of MMS's Offshore Energy and Revenue Management groups as well. Not only do the complexities and imperfections of the political policy process provide a rationale for seemingly inefficient agency designs in general, but an analysis of the specific process associated with MMS's creation also reveals the tradeoff in balancing conflicted goals and coordinating the associated tasks. The patterns of congressional appropriations and oversight associated with the agency's oil and gas management and tax collection groups also demonstrate the impact that these mechanisms can have. In increasing funding to the relatively poorly performing Revenue Management group at the expense of an Offshore Energy group which was the target of little congressional criticism, MMS's political history demonstrates that understanding the incentives of agency personnel cannot be separated from considering the sometimes curious decisions of their political superiors.

Nevertheless, while roles for political and social forces are embedded in the research to this point, goal ambiguity and task coordination—the focus of Chapters 3 and 4—affect performance because they directly affect the internal agency operations. As a result, the discussion thus far has been more fully focused on interactions and activities within the multiple-purpose regulator itself. The research in Chapter 4 demonstrated how separation between the revenue collection and regulatory groups within MMS—created through their geographical division, the divergent skillsets of the associated personnel, and the limited linkages between computer systems and internal workflows—mollified the potential for conflicts among the goals to impact operations. Moreover, the difficulties MMS was having in feeding data to revenue management were in large part driven by this organizational division.

No such organizational division existed between the groups associated with the second potential source of conflict at MMS, that between the agency's offshore development and regulatory missions. As Chapter 4 highlighted, Offshore Energy was designed to allow for the close interplay of governmental oil and gas functions in reaction to the failure of BLM and USGS to coordinate their activities (Committee on Appropriations 1982, Socolar 1982). The evidence simultaneously showed that the three programs which made up Offshore Energy—resource evaluation, leasing, and regulation—did in fact interact quite closely in supporting the provisions of the Outer Continental Shelf Lands Act (OCSLA). Thus, to the extent that personnel within Offshore Energy entertained competing objectives associated with facilitating leasing of offshore properties while regulating production on those properties, it is logical to surmise that goal conflict would have impacted operations.

In this chapter, I examine this second source of potential conflict in the context of popularly cited signals of MMS's regulatory torpor. I do not prove that MMS subverted its regulatory

objectives. In reality, the historical evidence on industry performance does not conclusively support that view. However, at the same time, I do not argue that MMS did not neglect its regulatory charge. Even though, for example, data on offshore oil spills shows that they were at historically low levels until MMS's last year as offshore regulator, this fact does not necessarily demonstrate that MMS was performing adequately as industry regulator or that oil and gas companies were operating safely prior to the Gulf disaster. In an environment characterized by low probability but extreme events, such evidence might simply veil potentially explosive problems yet to surface (Carrigan & Coglianese forthcoming). The magnitude of the *Deepwater Horizon* oil spill is certainly suggestive that this description might apply.

Rather than arguing whether the direct evidence implicates MMS, I supply data to help explain the origin of the behaviors that critics maintain were consequences of MMS's conflicted oil and gas management and regulatory functions. These behaviors include allegations that MMS management downplayed the findings of its scientists when they showed the potential for environmental degradation as well as the perception that the agency utilized an overly cooperative approach to regulating—both of which have been cited as signs of regulatory laxity borne from MMS's organizational design (Eilperin & Higham 2010, Flournoy et al. 2010, Urbina 2010b). In doing so, I focus particular attention on the political history of MMS in relation to its conflict within Offshore Energy to ask whether political and public preferences can help explain the outward signs that critics have cited as evidence of MMS's failure as a regulator.

Using this approach, I am able to simultaneously shed light on a more general set of questions associated with the behavior of multiple-purpose regulators. While scholars and practitioners studying goal ambiguity and conflict have asserted that agencies often elevate some

functions in response (Biber 2009, Richards 1986, Wilson 1989), this same scholarship offers few insights on how that decision is made in conflicted agencies. Applied to multiple-purpose regulators who balance regulatory and non-regulatory functions, to the extent they do emphasize one or the other, how do they make that decision? That is, in the presence of goal conflict, how does the regulatory agency determine whether to emphasize its regulatory or its non-regulatory function?

Positioning the regulatory and leasing functions within MMS's Offshore Energy to facilitate coordination simultaneously introduced the possibility that goal conflict could impact the group's overall performance. Yet, at the same time, this organizational decision does not tell us a priori how the resulting priority goal ambiguity might play out. As a result, I examine whether the political forces surrounding MMS's development are important to understanding the behavior of MMS's Offshore Energy group. In doing so, I find that political and public preferences can take us far in understanding Offshore Energy's decision making. The evidence shows that the changes to MMS's regulatory strategy over time were in large part reactions to specific presidential directives and congressional statutes. Moreover, they were reaffirmed in MMS's appropriations as well as congressional oversight of the agency. In addition to recommending specific innovations, the activities of these political principals also mandated certain actions and created the conditions whereby MMS was driven to change its regulatory approach to adapt to the resulting industry transformation. While these findings do not preclude the possibility that internal preferences also helped define MMS activities, they do suggest a need to broaden most existing studies of goal ambiguity which focus primarily on its effects on agency operations. Not only do political and social forces help explain the existence of multiple-purpose regulators as shown through MMS's creation in Chapter 4, these same forces also

explain how goal conflicts—when not diffused through institutional design—will affect agency focus.

In many ways, linking politics to MMS’s activities is made easier because beginning in the mid-1990s, the messages associated with external efforts to influence the agency were consistent among a variety of important actors. In contrast to the more measured approach to oil and gas development on the Outer Continental Shelf (OCS) exhibited earlier, by the middle of the 1990s the agency was beginning to face a broad political and social push to increase production to help the U.S. reduce its dependence on foreign sources of oil (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011). Even to the extent MMS did adopt an overly collaborative approach to regulating and downplayed the potential environmental risks associated with drilling, these actions were in large part prompted by external pressures related to the evolution of offshore oil and gas policy. As much as or more than its internal structure, political and public policy preferences were important drivers of the policy mix chosen by MMS. For this reason, one should not overlook these preferences and the role of political demands in evaluating whether MMS failed to achieve its purpose.

Shifting Science and Cooperative Regulation at MMS

Chapter 4 examined the extensive ethical recklessness exhibited by some MMS personnel—especially a subset of individuals associated with Revenue Management’s Royalty in Kind Program—revealed through a series of Department of the Interior Office of Inspector General (OIG) reports released between 2008 and 2010 (Devaney 2008, Kendall 2010a). Moreover, that chapter related the extent to which these improprieties have helped to fuel the consensus that MMS was not a vigilant regulator and maintained a “cozy” relationship with industry (Eilperin &

Higham 2010, Obama 2010c, Office of the Secretary of the Interior 2010b, Urbina 2010a).

Furthermore, the examination highlighted the common view that these acts present clear evidence of MMS's complicity in the Gulf oil disaster.

However, evidence pointing to MMS's regulatory laxity is not limited to the OIG investigations. Within weeks of the initial explosion and fire on *Deepwater Horizon*, accusations that agency scientists were not able to exert enough influence over some MMS offshore leasing decisions began to surface as well (Eilperin 2010, Urbina 2010b). Although similar accusations were levied at Interior more broadly, MMS was singled out in particular as an agency where such decisions lacked adequate consideration of possible environmental impacts. As Deputy Interior Secretary Hayes indicated in an interview, "There are certainly historical issues there [at MMS] that we're interested in addressing and reforming. I think we're in the process of getting a cultural change in the scientific part of MMS. We're making sure the science is not a means to an end, but an independent input to the process" (Eilperin 2010). Furthermore, one news article reported that some current and former staff scientists, on condition of anonymity, contended that MMS managers "routinely" overruled them when their studies highlighted environmental risks (Urbina 2010b). As one scientist indicated, "You simply are not allowed to conclude that the drilling will have an impact" (Urbina 2010b). Coupled with the evidence revealed through OIG investigations that at least some at MMS maintained overly close relationships with oil and gas company employees, downplaying environmental risks would seem a natural behavior for an agency so tied to its industry.

Associated with the belief that MMS did not maintain sufficient distance between itself and its regulated entities is the view that when MMS did engage the industry, it did so in an overly collaborative way. Critics have remarked that the fact that MMS invited industry to jointly

develop standards for offshore operations positioned it as an industry partner rather than a regulator with its own independently informed views (Eilperin & Higham 2010). This concern is of fundamental importance for those who bemoan the fact that the agency left some of its standards voluntary, undercutting their effectiveness (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011, pp. 71-72). For example, although it began discussions in 1991 with the oil and gas industry on the need for operators to have management systems in place to direct various operational activities, the resulting American Petroleum Institute Recommended Practices, RP75, were only made mandatory after the agency's breakup in 2010 (Office of Public Affairs 2010, Rosenbusch 2001).

Many view such examples of MMS's collaborative approach to oversight and close ties to industry as intimately connected to its perceived lack of vigilance and capture. This position is crystallized in Congressman Waxman's reference to the limited role of Obama's reforms to change "the laissez-faire approach of MMS in regulating the BP well" (Waxman 2010).

Although the question of which came first—whether collaboration preceded laxity or vice versa—is unclear, the implication remains that a more adversarial and distant regulatory body would have limited the potential for a spill like that associated with the *Deepwater Horizon* explosion (Eilperin & Higham 2010, Neill & Morris 2011). At a 2011 talk at the International Offshore Oil and Gas Law Conference, Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) Director Bromwich stressed the need for the successor to MMS to "strike a new balance that fully involves industry in the regulatory process but that recognizes the need...to exercise independent judgment" (Office of Public Affairs 2011).

Like the OIG reports, the outward signs of MMS's regulatory failure encapsulated in its collaborative approach and muted response to internal scientific studies have also been

connected to its organizational structure, a structure which not only combined tax collection and regulation but also made MMS responsible for facilitating offshore production through lease sales (Eilperin & Higham 2010, Neill & Morris 2011). Moreover, the view that organizational conflict within Offshore Energy helped fuel the regulatory torpor has also been important to the design of the subsequent reforms formalized in Secretary Salazar's order to dissolve MMS (Salazar 2010). President Obama's announcement of the restructuring demonstrates the crucial role that perceived regulatory neglect—exhibited through an overly conciliatory relationship and facilitated by the conflict between regulation and leasing—played in prompting reform. As suggested during his May 2010 press conference, following the first Inspector General communication:

Secretary Salazar immediately took steps to clean up that corruption. But this oil spill has made clear that more reforms are needed. For years, there has been a scandalously close relationship between oil companies and the agency regulates them. That's why we've decided to separate the people who permit the drilling from those who regulate and ensure the safety of the drilling (Obama 2010c).

Mechanisms for Political Oversight

As highlighted at the outset of this chapter, much research has attempted to delineate the extent to and conditions under which agencies are able to resist politicians' efforts to control their activities. However, closely aligned with this strain of academic inquiry—and indeed largely prompted by it—is an equally deep literature studying the relative influence of various political principals. Most initial efforts to ascertain the degree to which politicians can restrain government agencies focused on Congress (Weingast 1984). To a large extent, writers in this tradition were reacting to those who believed that legislators had relatively little control over agencies. As described, agency personnel are typically afforded greater access to information

and possess significantly more expertise in their specific policy area compared to their political counterparts in Congress (Bawn 1995, Epstein & O'Halloran 1994, Huber & Shipan 2002). Furthermore, the little noticeable effect of congressional oversight hearings on subsequent agency behavior suggests that agencies may be able to ward off efforts of their legislative principals in influence organizational priorities (Croley 2008, Ogul & Rockman 1990, Niskanen 1971, Wilson 1980).

In response, proponents of the “congressional dominance” view of bureaucratic behavior point to the simple fact that Congress delegates regulatory policy making and implementation to agencies voluntarily which suggests the gains must exceed the slippage when agency decisions diverge from lawmakers’ preferences (Weingast 1984). While this fact does not rule out the possibility that legislators delegate difficult decisions to avoid blame (Fiorina 1982, Mayhew 1974, Weaver 1986), those that believe Congress is able to control the activities of public officials simultaneously argue that little noticeable evidence of direct congressional oversight does not necessarily mean that bureaucrats operate with discretion (McCubbins et al. 1987, Weingast & Moran 1983).

Of course, the ability of lawmakers to hold agencies accountability is impacted by the executive branch as well (Spence 1997). Simply introducing a second principal can limit the ability of either party to restrain the agency from implementing its own preferences (Moe 1984, Dixit 1997). On the other hand, the experience of the Consumer Product Safety Commission (CPSC) presents an example where a contentious political environment fueled by the presence of multiple principals has had the opposite effect (Moe 1989). In attempting to regulate consumer products, CPSC has been hindered by restructurings, procedural shifts, and mission reorientations originating from the competition between Congress, the president, and associated

interest groups to direct its actions (Moe 1989). Even so, scholars skeptical of the legislative branch's ability to control agency behavior have not solely focused on the mere presence of the executive to deter Congress (Moe 1987, 1990). Rather, much of the debate between those who believe agencies are more subject to congressional control and those who view the executive as more influential has focused on the relative efficacy of the mechanisms available to constrain behavior.

Matthew McCubbins and Thomas Schwartz split the instruments of control available to lawmakers into two categories (1984). The first category, which they refer to as “police-patrol” oversight, describes direct efforts by Congress to expose agency activities that conflict with legislative obligations. Included in this category are oversight hearings and other explicit information gathering methods. The second, which they label “fire-alarm” oversight, instead relies on rules and procedures that allow interest groups and citizens to notify legislators when agencies drift from their mandates. Since it reduces the costs of oversight to lawmakers and enables constituents to focus attention on those issues most important to them, Congress will typically prefer to use indirect methods when both are feasible (McCubbins & Schwartz 1984).

The Administrative Procedure Act of 1946 (APA) is a primary vehicle of “fire-alarm” oversight (McCubbins et al. 1987). By forcing agencies to provide advanced notice of new policies, to demonstrate a clear link between evidence and decisions, and to allow for broad participation in the decision-making process, constituents presumably are empowered to engage in more effective monitoring. Further, procedures like those introduced in the APA may allow the enacting coalition to “stack the deck” in favor of the law's intended beneficiaries, both currently and into the future. The National Environmental Policy Act of 1969 is one example. By mandating that agencies assess environmental costs as part of their rulemaking processes, the

law provided environmentalists with a political voice (McCubbins et al. 1987). Finally, unlike ex-post mechanisms such as oversight hearings and appropriations, procedures also inhibit the ability of the agency to change the status quo. Even if Congress can punish agency actions after they occur, the legislature's ability to restore the original agreement will be limited since those benefiting from the agency's discretion will be reluctant to give up their gains (McCubbins et al. 1989).

Nevertheless, these methods have limits. Using procedures to control regulatory decisions suggests a rather limited view of control if these tools merely keep agency actions within broad boundaries that do not set off fire alarms (Moe 1987). Further, legislators do approve budgets and confirm agency appointments. Yet, it is the Executive Office which typically proposes budgets and candidates. As a result, the president retains substantial power to set the agenda (Arnold 1998, Moe 1987, Moe & Wilson 1994, Waterman 1989). Furthermore, although some empirical evidence does show that budgets can alter agency behavior (MacDonald 2010, Weingast & Moran 1983, Wood & Waterman 1991), it is less clear whether the legislative or executive branch holds more power over agencies with regard to appropriations (Carpenter 1996). In addition to its agenda setting power, presidential control over agency officials further draws from the Civil Service Reform Act of 1978 which enables the president to use reductions in force or transfers to reorganize agencies (Wood & Waterman 1991).

Studies describing the origins of presidential power have typically focused attention on the president's ability to veto legislation as well as the personal characteristics of the individual that occupies the Oval Office (Ingberman & Yao 1991, Neustadt 1980, Pious 1979). However, because the U.S. Constitution is not specific in defining the president's authority, many have argued that a large portion of the executive's power over Congress is derived from the ability and

willingness of the president to act unilaterally (Moe & Howell 1999, Moe & Wilson 1994, Zegart 1999). Presidents can make law—without congressional approval—through executive orders, proclamations, executive agreements, and national security directives (Moe & Howell 1999). One result of the president’s ability to exploit vacuities surrounding his capacity to take unilateral action is the proliferation of agencies created without legislative input (Howell & Lewis 2002). Another is the expansion of presidential authority over existing regulatory agencies during the past 40 years. President Reagan’s Executive Order 12,291 mandated that agencies submit proposed rules to OMB for approval accompanied by economic analyses of their potential costs and benefits. Although OMB’s role in regulatory review expanded considerably through this Order, it was met with little resistance from Congress (Moe & Howell 1999, Moe & Wilson 1994). OMB oversight is now considered an important mechanism of presidential control over regulatory agencies (Moe 1990). Yet, President Clinton expanded his authority over agencies beyond what even President Reagan was able to secure (Kagan 2001). By issuing formal directives to agency leaders to directly guide their activities and making public announcements to tie regulatory successes to his administration, President Clinton was able to draw agencies even closer to the executive (Kagan 2001).

Unsurprisingly, the debate over the relative influence of Congress and the president has prompted interest in measuring the outcomes associated with the two branches efforts to control agency behavior. Many of these empirical examinations have focused on the efficacy of particular mechanisms available to each branch. In the case of Congress, tests measuring the relationship between controls and outcomes have been extensive, but the results have sometimes contradicted each other. For example, Barry Weingast and Mark Moran show a significant effect of turnover in Congress on Federal Trade Commission (FTC) antitrust enforcement in the 1970s

(1983), but Terry Moe's subsequent reexamination reveals a more benign impact of changes in the party affiliation of congressional principals on FTC decisions (1987). On the other hand, ideology of the oversight committee in particular and Congress more generally does appear to have swayed Food and Drug Administration inspections over a period of 50 years (Shipan 2004). While budget cuts in the early 1980s seem to have had only minor effects on Environmental Protection Agency (EPA) enforcement (Ringquist 1995, Wood 1988), others have found that congressional oversight and appropriations decisions were important predictors of activity levels through the late 1980s at several regulatory agencies including EPA (Wood & Waterman 1991).

Tests of the outcomes associated with specific administrative procedures have yielded two broad conclusions. First, policy analysis requirements, including requiring that cost-benefit calculations accompany rulemaking, appear to be more effective in constraining current agency behavior than general notice-and-comment procedures (Morgenstern 1997, Potoski & Woods 2001). Second, research has typically not found support for the notion that procedures can be used to bias future decisions toward favored groups (Balla 1998, Hahn et al. 1999, Shapiro 2002, Spence 1999 but see de Figueiredo & Vanden Bergh 2004). The fact that administrative procedures are not always able to limit regulatory agency discretion may not be surprising when viewed from the perspective of theoretical extensions of the procedural hypothesis. Ultimately, a tradeoff exists for the legislator in designing procedures that balance the desire to control future agency policy with the cost of either tolerating agencies less knowledgeable regarding their policy space or enduring more influential (and potentially biased) interest groups (Bawn 1995, de Figueiredo et al. 1999, Epstein & O'Halloran 1994, Horn & Shepsle 1989).

The empirical evidence also indicates that the presence of a second principal, the president, substantially impacts attempts by Congress to exert control. Although theory may suggest that

agencies gain autonomy in the presence of additional overseers, most studies conclude that, in fact, both parties impact agency decision making (Moe 1985, 1990, Snyder & Weingast 2000, Wood & Waterman 1991, 1994). Further, these analyses have shown that such interplay is not isolated to one or two agencies (Golden 1998, Kerwin 2003). For example, in addition to the evidence that all three branches of government influenced National Labor Relations Board voting over the period from the late 1940s through the 1970s (Moe 1985), EPA's implementation of hazardous waste law demonstrates intense competition between Congress and the Executive Office to control how vigorously enforcement was pursued (Whitford 2005). Survey responses of senior government officials at a variety of agencies further confirm that the effect is not localized and that both the executive and legislative branches exhibit significant policy influence (Furlong 1997).

Oil and Gas Development in the Shadow of Exxon Valdez

In the remainder of this chapter, I show how the presidential and congressional influences described in the previous section interacted to directly affect operations at MMS's Offshore Energy group. As we will see, many of the mechanisms wielded by Congress and the president to control agency actions—including congressional oversight hearings and appropriations as well as presidential directives and initiatives—also played important roles in prompting MMS's shifting approach to regulation and development.

Even so, unlike many of these studies which highlight a contentious competition between lawmakers and the executive for control, this research demonstrates a remarkable level of agreement between the two branches in what they viewed to be the appropriate policy balance between environmental protection and safety on one hand and oil and gas development on the

other. During at least the last fifteen years of MMS's existence, congressional and presidential preferences were unified in their push for greater exploration on the OCS to meet growing domestic demand (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011). Not only were political preferences united, but these preferences also reflected the general view among the broader public that the U.S. needed to expand its national oil and gas supplies. Thus, while the oil and gas industry itself clearly supported efforts to expand production, so did Congress, the Executive Office, and the public as well.

Table 5-1 – Subject Matter of Congressional Hearings in Which MMS Personnel Testified by Function (1982 – 2009)

Period	Evaluation	Leasing	Environment	Regulation	Revenue	Total
1982-1985	14	12	14	5	8	25
1986-1989	7	6	12	10	6	22
1990-1993	5	7	12	6	5	20
1994-1997	4	0	3	2	9	16
1998-2001	2	3	2	0	5	9
2002-2005	6	2	3	0	1	8
2006-2009	10	9	8	0	10	18

Notes: Does not include budget hearings. The sum of subject counts can exceed the total because hearings can involve multiple functions. Evaluation refers to identifying areas for oil and gas exploration whereas leasing refers to leasing properties to oil and gas producers. Source: Searches in LexisNexis Congressional database of congressional hearings. To categorize the subject matter of the hearings, each hearing's title and summary description were examined. In some cases where clarification was required, the testimony was reviewed as well.

However, this was not always true. During the period from 1982 through the early 1990s, Congress remained actively interested in environmental and safety issues, as reflected in the relative abundance of oversight hearings focused on such topics. As reviewed in Chapter 4, hearings during the period, for example, examined the potential for environmental damage in drilling off the Atlantic coast, discussed platform evacuation procedures, and examined safety and training requirements for oil rigs (Committee on Commerce, Science, and Transportation 1984, Subcommittee on Oversight and Investigations of the Committee on the Interior and Insular Affairs 1984, Subcommittee on Panama Canal/Outer Continental Shelf of the Committee

on Merchant Marine and Fisheries 1983, 1984). Table 5-1 above which reproduces Table 4-2 further demonstrates the extensive interest in environmental protection and offshore safety during this period. Over the 12 years from 1982 through 1993, environmental and regulatory issues actually generated more combined interest than evaluation and leasing issues as measured by how often they were the subject of hearings during that period. In contrast, during the 12 years from 1998 through 2009, evaluation and leasing were roughly two and a half times more likely to be considered than environment and regulation.

Relative budget changes among the programs associated with Offshore Energy further demonstrate the cautious approach that politicians took with regard to offshore oil and gas development through the early to mid-1990s. Although Offshore Energy's total budget declined by 37% from 1983 through 1996, the impact was not equally shared among the group's three programs. Table 5-2 below shows the average yearly percent changes in appropriations for the Regulatory, Leasing and Environmental, and Resource Evaluation programs for the periods between 1983 and 1996 and 1996 and 2009. The year 1996 was chosen as the cutoff since, as discussed in Chapter 4, it directly preceded Congress' decision to allow the Offshore Energy programs to augment a portion of their appropriations through a tax increase on non-producing offshore leases. Moreover, using 1996 evenly split the timeframe into two equal periods. As the table demonstrates, the Regulatory program's budget declined by just over 2% per annum during the first half of MMS' existence. At the same time, the Leasing and Environmental program absorbed a much larger 5.8% decrease per year, and the Resource Evaluation program's budget fell by 7.2% per year during the same period. In fact, while appropriations targeted to Resource Evaluation in real 2005 dollars were roughly \$100 thousand greater than corresponding appropriations directed to the Regulatory program in 1983, by 1996, the latter received a budget

that was almost \$20 million greater than that provided to Resource Evaluation. The absolute differences between the Leasing and Environmental and Regulatory programs were even more dramatic. Leasing and Environmental's appropriations were \$22.2 million greater than the Regulatory program in 1983 but almost \$7 million less in 1997, representing over a \$29 million swing toward greater support for regulatory oversight.

Table 5-2 – Yearly Budget Changes for Offshore Energy's Regulatory, Leasing and Environmental, and Resource Evaluation Programs (1983 – 2009)

Offshore Energy Program	Mean Yearly Budget Change		Difference Between Periods
	1983 - 1996	1996 - 2009	
Regulatory	-2.07%	2.26%	4.33%
Leasing & Environmental	-5.81%	3.66%	9.47%
Resource Evaluation	-7.21%	3.71%	10.91%
Total	-5.04%	3.02%	8.06%

Notes: Mean Yearly Budget Change represents average percent change in budget over periods from 1983 to 1996 and from 1996 to 2009 for each of Offshore Energy's three core programs. Percentages were computed based on budget figures in thousands of 2005 dollars. Total represents total percent change computed by adding Regulatory, Leasing & Environmental, and Resource Evaluation budgets by year and then calculating percentage changes using same procedure as used for individual programs. Difference Between Periods is simple difference for average percentage change for 1983 through 1996 and 1996 through 2009. Since first change is computed as difference between first and second year, mean percent change includes 13 years for each period. Information Management, which was added by Offshore Energy as a separate line item beginning in 1992, is excluded. Source: Minerals Management Service Budget Justifications for fiscal years 1985 through 2011.

Because of the integrated nature of MMS's Offshore Energy group, the Resource Evaluation and Leasing and Environmental programs supported tasks associated with oil and gas development as well as regulatory oversight and environment protection (Minerals Management Service 1986). Even so, both programs focused a substantially larger portion of their resources on development activities relative to the Regulatory program given each had important responsibilities related to the offshore oil and gas leasing process. Thus, the patterns are suggestive that MMS's political principals—while cutting budgets for all groups within Offshore Energy—were relatively more concerned with safety and environmental protection and less with offshore oil and gas development in comparison to the latter 14 years ending in 2009. Furthermore, the relative budget changes correlate to relative declines in personnel numbers or

headcount. Over the period from 1983 through 1996, headcount assigned to Resource Evaluation declined by 44% and by 35% for Leasing and Environment. In contrast, the Regulatory program lost only 22% of its personnel during the same timeframe.

At the same time it was experiencing changes to its budget structure, related political and environmental developments were simultaneously affecting the breadth of Offshore Energy's duties. As described in Chapter 4, although it did not directly involve OCS operations, the Exxon Valdez spill in 1989 had important indirect consequences for drilling and production on offshore lands. In addition to prompting congressional hearings related to environmental and regulatory concerns, the associated Oil Pollution Act of 1990 bestowed additional responsibilities on MMS in connection with oil spill response planning and research while, at the same time, expanding Offshore Energy's ability to use penalties to enforce its regulations (Minerals Management Service 1991, pp. 31, 81-83 & 91; Minerals Management Service 1993b, pp. 82-83).

However, perhaps the most substantial impact on MMS operations during this period was a series of moratoria issued through Congress and President George H.W. Bush. In his statement on Outer Continental Shelf Oil and Gas Development in June 1990, Bush communicated his intent to impose bans on drilling and development for the southwest coast of Florida, 99 percent of the California coast, and Oregon and Washington waters until 2000 under the authority granted him through the OCSLA (Bush 1990). In addition, he declared a moratorium on development in the North Atlantic and authorized the buyback of leases already issued in Florida.

These moratoria were both supported and subsequently expanded by Congress. For example, the Department of the Interior and Related Agencies Appropriations Act passed in

1993 prohibited funds from being used to support leasing activities in additional areas in the Eastern Gulf as well as the remainder of the Atlantic coast (Department of the Interior and Related Agencies Appropriations Act, 1994 1993, Section 107). A subsequent Appropriations Act from 1997 further extended this prohibition to the North Aleutian Basin off the Alaska Peninsula (Department of the Interior and Related Agencies Appropriations Act, 1998 1997, Section 109). President Clinton's June 1998 Memorandum for the Secretary of the Interior both extended George H.W. Bush's moratoria and added to the list additional leasing areas already identified through congressional legislation (Clinton 1998). In response to the moratoria as well as President Clinton's Executive Order 12,839 which directed agencies to eliminate 4% of their staff by 1995 (Clinton 1993a), Offshore Energy closed its Atlantic office and significantly scaled back operations in its Pacific and Alaska offices as well (Minerals Management Service 1995, p. 100).

Political Innovation and Changing Oil and Gas Technology

Even so, the late 1980s and early 1990s appear to have marked the high point for political emphasis on environmental and regulatory concerns related to OCS oil and gas development. More broadly, as part of his plan produce a government that "works better, costs less, and get results Americans care about" (Kamensky 1999), in 1993, President Clinton launched the National Partnership for Reinventing Government, an initiative emphasizing performance based and other more innovative approaches to regulation. These efforts were further exemplified through Clinton's Executive Order 12,866 that explicitly established a role for market based regulatory methods such as marketable permits, performance standards, and negotiated rulemaking (Clinton 1993b). However, in addition to setting out a blueprint for regulatory

innovation, Clinton's program, which also aimed to consolidate and eliminate unnecessary government functions, targeted MMS as an agency initially subject to termination by October 1997 (Bonora & Gallagher 2001). In particular, as late as March 1995, the House Interior Appropriations Subcommittee was still considering the possibility that the functions of MMS would be dispersed throughout Interior, with oversight for state and Indian royalty collection in particular being outsourced to the beneficiaries themselves (Subcommittee on Interior Appropriations, Committee on Appropriations 1995, pp. 500-501). Even so, after a series of hearings during 1995 in which several observers noted the "irony" of the proposals since they would in effect represent a return to the situation that prompted MMS's initial creation, Congress ultimately decided not to "devolve the functions of the MMS" (Bonora & Gallagher 2001, Subcommittee on Energy and Mineral Resources of the Committee on Resources 1995a, 1995b).

In response to Clinton's Reinventing Government program, MMS began to experiment with negotiated rulemaking almost immediately. In addition to forming a committee to study and propose revised gas valuation rules (Cedar-Southworth 1996, p. 4; Minerals Management Service 1995, p. 8), MMS organized negotiations between itself, local governments, and industry to reach compromises on contentious leasing issues associated with the Pacific OCS (Minerals Management Service 1995, p. 11). Further, this foray into negotiated rulemaking was part of a broader plan by MMS to update its regulatory strategy in reaction to broader political and industry developments.

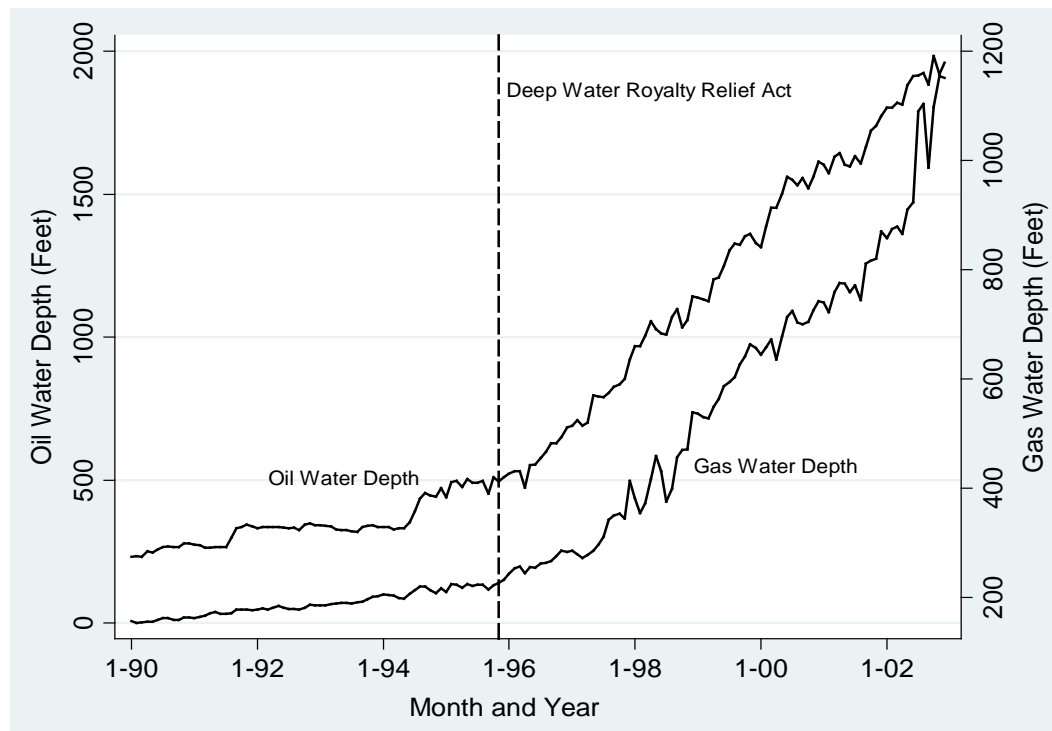
By the early 1990s, oil and gas operations in the Gulf, as well as along the Pacific OCS, were changing in two associated ways. The first change related to an increasing role for small development companies, referred to as independents by MMS and the industry, as integral players in bringing oil and gas to the market. During the seven years from 1985 to 1992, the

number of operators producing in the Gulf roughly doubled from 64 to 133 (Minerals Management Service 1993b, p. 82). Independents often entered the market during this period by purchasing producing oil and gas leases from large companies called majors with the hope that lower levels of overhead would enable them to operate these maturing properties more profitably. Largely as a result of the moratoria on drilling in the eastern Gulf as well as parts of Alaska issued by President H.W. Bush after Exxon Valdez (Bush 1990), majors were increasingly focusing their attention on more promising overseas markets, a move which intensified the influx of independents (Minerals Management Service 1993b, p. 82).

However, soon after majors' interest in the shallow waters of the Gulf waned, these companies began to look to deep water production in waters greater than 200 meters as a potential source of new growth. Figure 5-1, which shows the average water depth of oil and gas production in the Gulf of Mexico weighted by total output, reflects this trend. As the figure suggests, instrumental in this growth was the Deep Water Royalty Relief Act, passed in November 1995, which amended the OCSLA to suspended royalty payments on Western and Central Gulf deep water leases offered through the middle of November 2000 until significant amounts of oil and gas had been produced on those leases. Once the associated company applied for relief, the Act also extended to existing leases in which "new production would not be economic in the absence of the relief from the requirement to pay royalties" (Outer Continental Shelf Deep Water Royalty Relief Act 1995, Section 302). In the five years leading up to the Act, the average water depth of oil production in the Gulf increased by less than a four feet per month. In the five years after, average water depth increased by almost 18 feet per month, well over a fourfold increase. However, the relative numbers were even more dramatic for natural

gas where the pace of monthly increases was over eight times greater in the 60 months after the congressional legislation.

Figure 5-1 – Average Water Depth of Oil and Gas Production in the Gulf of Mexico (January 1990 – December 2002)



Notes: Oil Water Depth refers to the average weighted water depth of oil production in the Gulf during that month. Gas Water Depth is the same measure for gas. The average monthly water depth is computed as the average water depth of all producing wells weighted by each well's production in that month. Sources: MMS's OGOR-A Well Production data and BOEMRE's Offshore Statistics by Water Depth database.

In response to the changing political and operational environment associated with Gulf oil and gas development in the early to mid-1990s, Offshore Energy made two changes to its regulatory strategy. First, it overtly shifted its regulatory focus toward overseeing the operations and developing rules to ensure the financial viability of the newly arriving independents. As described in its 1996 Budget Justification:

Significant resources will continue to be employed in the offshore inspection program with particular emphasis on small operators to ensure operations are conducted in a safe and environmentally sound manner. Many small operators are underfunded or understaffed, thus necessitating a higher level of inspection effort and monitoring of

operations to ensure compliance with applicable safety and environmental regulations and requirements. (Minerals Management Service 1995, p. 86)

This shift also extended to rule promulgation where, for example, MMS updated its bonding rule to require supplemental protection to ensure that small companies would have sufficient resources to clear their sites at the end of leases (Minerals Management Service 1993a). As a complement to this approach, Offshore Energy began to also experiment with random sampling techniques to determine who to inspect as a mechanism to manage the increasing number of operators since staffing was declining at the same time (Minerals Management Service 1993b p. 89). A subsequent 1998 MMS commissioned study analyzing oil spill data to test whether independents actually did perform worse than majors did not find evidence to support this fear. However, importantly, the study reiterated that such a view was common among industry observers, suggesting that there was “widespread concern that an expected increase in the independents’ relative share of exploration and production...operations in the Gulf OCS region [would] be detrimental to worker safety or the marine environment” (Coastal Marine Institute 1998, p. 35).

The second change involved an equally public decision by MMS to cooperatively develop standards with industry for deep water drilling and production. Fundamental to that effort was MMS’s participation in the DeepStar Research Project which brought together 16 oil and gas companies as well as 40 vendors to jointly develop technology and systems capable of extracting oil and gas in deep water (Minerals Management Service 1996, p. 85; OCS Policy Committee’s Subcommittee on OCS Legislation 1993, pp. 65-66). Because the large oil and gas companies were those with the financial resources and capabilities to consider drilling in deep water, MMS’s effort amounted to a more collaborative stance toward major producers. Even so, the move to more cooperative relationships with industry to develop standards and a regulatory

infrastructure was also a function of the nascence of deep water technology at the time. As described by Associate Director Carolita Kallaur at a 2001 talk at the Institute of Petroleum's International Conference on Deepwater Exploration and Production:

An HSE [health, safety, and environmental] lesson learned from our early experience with GOM [Gulf of Mexico] deepwater development is that there is tremendous value from collaboration between government, industry and the scientific community in the area of research and operational requirements. This is particularly true if it is found that the operating environment is totally different from what one is used to, and it is critical to be able to "think out of the box." (Kallaur 2001)

Given that neither MMS nor its regulated entities knew how to conduct deep water operations, the agency determined that the best way to develop the capabilities was to work with industry in doing so. In response to the move to deep water and the increasing role for independents, the Regulatory program also developed a two-part formal inspector training program aimed at dealing with these developments (Minerals Management Service 1995, p. 92).

In some ways, the shift toward collaboration represented a new approach to regulation for Offshore Energy. Responding to a 1993 report submitted by the OCS Policy Committee, which included representation from coastal states, environmental groups, and industry, Secretary of the Interior Babbitt indicated in a letter to the Committee that one of its most important recommendations was "that the OCS program should be regenerated based on consensus" (Minerals Management Service 1994). Regardless, this was not the first time that the energy management function at MMS had used a collaborative approach to deal with emerging technologies. As early as the mid-1980s, MMS was cooperating with oil and gas companies to test and develop technologies to deal with the extreme conditions in the waters surrounding Alaska (Minerals Management Service 1984, p. 66). Further, at that time, the Technology Assessment and Research Program element within Offshore Energy was even engaging industry

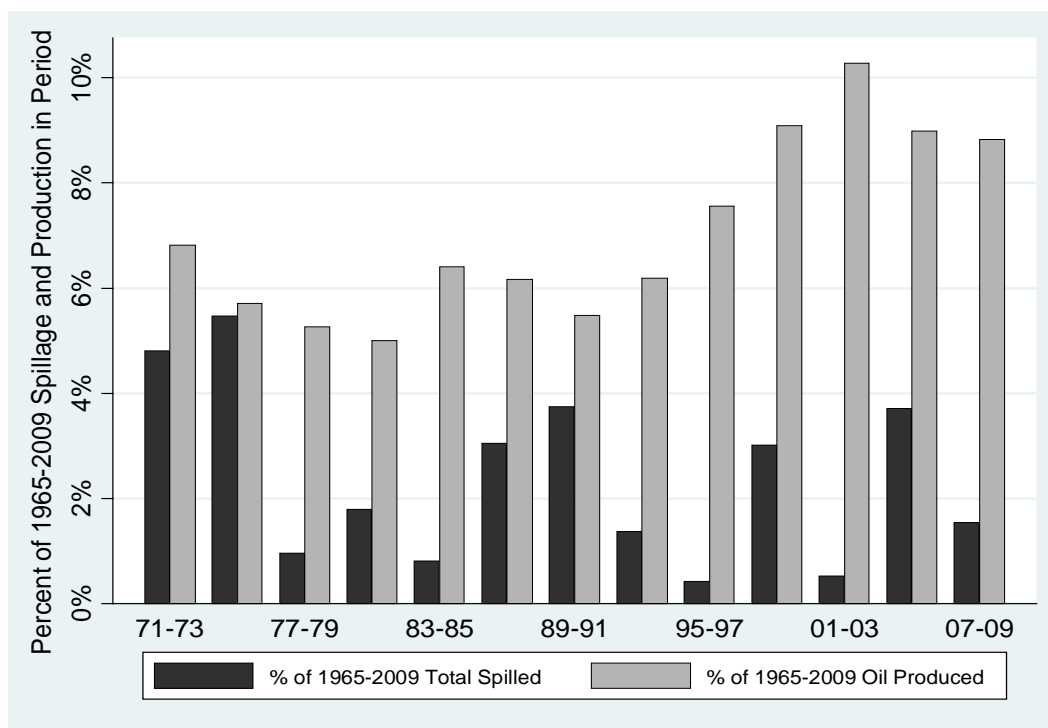
to test platforms destined for deeper water around California and in the Aleutian area of southwest Alaska (Minerals Management Service 1984, p. 66).

As evidence of the broad support for its programs, Offshore Energy garnered several awards during the mid to late 1990s including two Vice Presidential Hammer Awards, two Environmental Quality Awards, the Interior’s Steve Kelman award for procurement franchising, and the Los Angeles Federal Executive Board’s Heroes of Reinvention award for its collaborative approach toward oil and gas development in the Pacific OCS region (Bonora & Gallagher 2001, Minerals Management Service 1995, p. 11). In particular, its 1997 Hammer Award was received for its “several major reinvention streamline processes” and its efforts to “become customer focused” (Hammer Awards 1997). One year earlier, MMS received one of two 1996 Federal Environmental Quality Awards given out by the Council on Environmental Quality for “its actions to integrate environmental values into its agency mission and its commitment to excellence in environmental decision making” (Office of Communications 1996).

Simultaneously, as shown in Figure 5-2, oil spills from OCS activities—as measured in barrels of crude oil, condensate, and other chemicals spilled as a percent of the total spilled during the entire period from 1965 to 2009—were at an all-time low in the early to mid-1990s (see also Minerals Management Service 1995, p. 43). More dramatically, relative to the six year period from 1965 through 1970 when drilling and production resulted in almost 380,000 barrels being deposited into offshore waters, the period from 1992 to 1997 resulted in only 10,000 barrels spilled. Furthermore, except for a brief uptick between 2004 and 2006 associated with the damage to offshore platforms from Hurricane Katrina, spillage rates did not display any measurable trend upward prior to the *Deepwater Horizon* accident despite climbing production

and the move to deeper water. MMS’s commissioned study of independent oil and gas companies aptly summarized these observations, suggesting “it should be noted that the data available show a remarkable decline in accidents and oil spills over the past two decades” (Coastal Marine Institute 1998, p. 37). Further, in a question and answer session less than three weeks prior to the *Deepwater Horizon* explosion and fire, President Obama reiterated this view, suggesting, “oil rigs today generally don’t cause spills. They are technologically very advanced” (Obama 2010b).

Figure 5-2 – Percent of Total 1965 – 2009 OCS Barrels Spilled and Oil Produced in Successive Three Year Periods



Notes: For each three year period from 1965 through 2009, the vertical axis measures the percent of total barrels spilled as well as oil produced during that period relative to the entire 45 years. Barrels spilled is defined as total crude oil, condensate, and other chemicals spilled for spills of one or more barrels associated with OCS activities. Total oil production is defined as total OCS crude oil and condensate production in barrels. The periods 1965 to 1967 and 1968 to 1970 are removed to facilitate exposition as those periods were marked by relatively high spillage and would otherwise obscure differences in later periods. The period from 2004 to 2006 includes spills resulting from damage attributed to Hurricane Katrina. Sources: BOEMRE spreadsheets titled Federal OCS Oil & Gas Production as a Percentage of Total U.S. Production: 1954 – 2010 and All Petroleum Spills ≥ 1 Barrel from OCS Oil & Gas Activities by Size Category and Year, 1964 to 2009.

Building Political and Social Pressure for Development

In addition to legitimizing collaborative regulatory tactics through Clinton's Reinventing Government initiative, executive policy with respect to offshore energy—which was beginning to focus greater attention on development anyway—accelerated a push to expand oil and gas exploration during the presidency of George W. Bush. The Bush efforts began in January 2001 with the creation of the controversial National Energy Policy Development Group chaired by Vice President Dick Cheney. More commonly known as the Energy Task Force, the group was subsequently criticized for not adequately incorporating environmental groups' input in developing its recommendations for a national energy strategy four months later (Abramowitz & Mufson 2007, Eilperin & Higham 2010). Further, while Bush's January 2007 Memorandum for the Secretary of the Interior made only minor alterations to the existing congressional moratoria to ensure consistency with the Gulf of Mexico Energy Security Act (Bush 2007), his 2008 Memorandum resulted in drastic changes, opening up all areas of the OCS with the exception of those designated as marine sanctuaries (Bush 2008a). In his accompanying remarks, Bush noted, "One of the most important steps we can take to expand American oil production is to increase access to offshore exploration" (Bush 2008b). Further, he implored Congress to relax its restrictions associated with its appropriations bills. Only weeks before the *Deepwater Horizon* disaster, President Obama echoed Bush's enthusiasm for further offshore drilling, removing only the Bristol Bay area from leasing consideration and proclaiming in an associated speech that "today we're announcing the expansion of offshore oil and gas exploration" (Obama 2010a, 2010d).

Contrary to President George W. Bush's claim for the opposite, Congress appears to have supported this policy shift as well. Table 5-3—which summarizes the important laws directed at

either Offshore Energy or Revenue Management enacted during MMS's existence—demonstrates this swing. Beginning with the Deep Water Royalty Relief Act in 1995, the primary focus of each law Congress adopted for the subsequent 15 years was on either improving royalty collections or encouraging offshore development. For example, although it represented a compromise by extending moratoria on waters near the Florida coast, the Gulf of Mexico Energy Security Act required Offshore Energy to offer 8.3 million acres for leasing, 5.8 million of which were previously prohibited by either Congress or the president, within one year. With its emphasis on production relative to environmental preservation, this 15-year period stands in contrast with the first 13 years of MMS's existence where acts such as the 1986 OCSLA Amendments and the 1990 Oil Pollution Act suggested a congressional desire for more cautious development of oil and gas in offshore waters.

Table 5-3 – Summary of Important Statutes Enacted Pertaining to Offshore Energy or Revenue Management (1982 – 2010)

Public Law	Name of Act	Year	Summary
97-451	Federal Oil and Gas Royalty Management Act	1983	Provided for accounting and auditing systems to determine oil and gas payments
99-272	Outer Continental Shelf Lands Act Amendments	1986	Established policy for providing information to coastal states related to development
101-380	Oil Pollution Act	1990	Established fund for oil pollution damages and provided for oil spill research
102-486	Energy Policy Act	1992	Required Interior to disburse monthly to states all mineral leasing payments
104-58	Deep Water Royalty Relief Act	1995	Provided royalty rate relief for offshore drilling in deep water of Gulf
104-185	Federal Oil and Gas Royalty Simplification and Fairness Act	1996	Established statute of limitations on royalty collections and appeal limits
109-58	Energy Policy Act	2005	Authorized Interior to develop alternative energy program on OCS
109-432	Gulf of Mexico Energy Security Act	2006	Required lease offerings for certain areas in Gulf previously under moratoria

Sources: Various Congressional Research Service Summaries, Minerals Management Service Budget Justifications for fiscal years 1985 through 2011, and the public laws themselves.

However, the congressional shift in focus is perhaps more clearly demonstrated by recounting Table 5-1 which provided a tabulation of hearings by the associated agency function or functions in which MMS personnel appeared. As described, over the last 12 years of its existence, leasing issues were a focus in 14 hearings and evaluation issues in 18 hearings while environment and regulation combined were subjects of only 13. Yet, even these numbers for environment and regulation are artificially inflated because hearings associated with laws to expand production such as the Deep Water Royalty Relief Act still invited environmental groups to participate. Focusing specifically on regulation, one finds that the numbers are even more striking. Whereas over the first 13 years of MMS's existence, a total of 21 hearings involved an important discussion of offshore regulation, during its subsequent 15 years ending in 2009, only one hearing included any extended discussion of regulatory issues. Furthermore, even that case was fundamentally focused on a proposal to shift BLM's onshore regulatory responsibilities to the affected states and included very little mention of MMS's offshore regulatory program (Subcommittee on Energy and Mineral Resources of the Committee on Resources 1996).

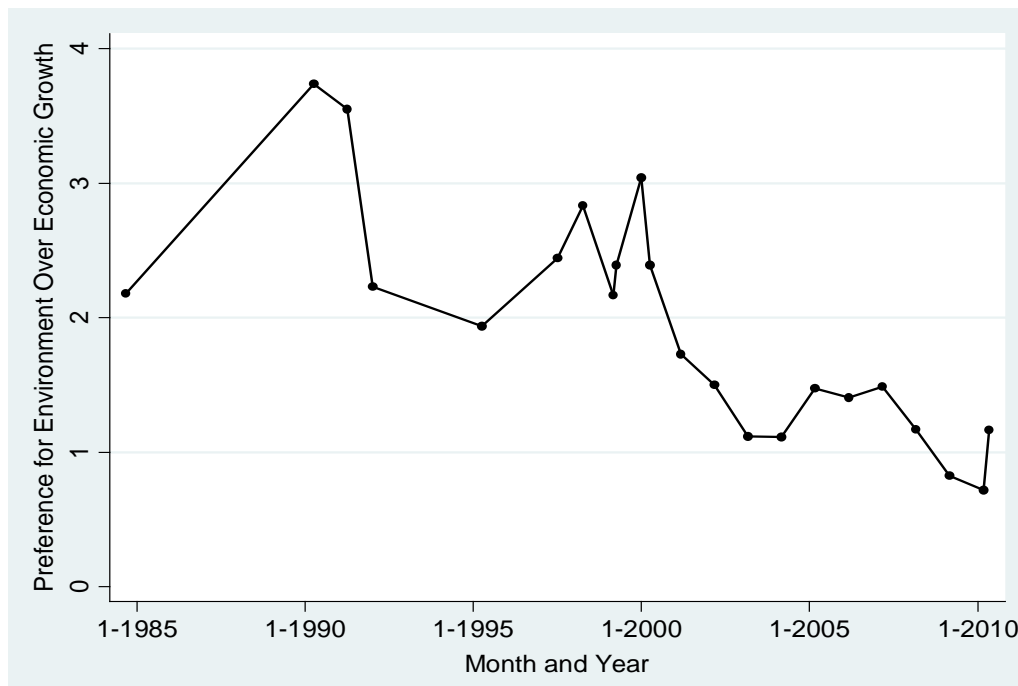
Table 5-2 demonstrates that the shift in presidential and congressional policy focus also resonated in budgetary decisions as well. In contrast to the period through 1996 in which Offshore Energy's Resource Evaluation and Leasing and Environmental programs bore a much greater fraction of the group's overall budget declines, the increases over the subsequent period were more evenly spread and, to some extent, actually concentrated the gains on MMS's leasing functions relative to its Regulatory program. During the 14 years beginning in 1996 and ending in 2009, the Regulatory program's budget including the revenue offset on non-producing leases grew by a healthy 2.3% per year. Nevertheless, the Resource Evaluation and Leasing and Environmental programs both grew by 3.7%, almost one and half times the growth rate of the

Regulatory program. While these figures are somewhat misleading since Resource Evaluation and Leasing and Environmental were beginning from smaller bases, by 2009, the latter group had closed its budget gap by roughly \$4.9 million relative to the Regulatory group and enjoyed overall appropriations which were almost equivalent to regulation. Moreover, the Resource Evaluation's budgets roughly kept pace with the Regulatory program from 1996 through 2009 which was a substantial change from the previous period where the former lost over \$19.8 million to the Regulatory program.

Finally, evidence from public opinion surveys demonstrates that the shifting priorities of politicians appear to have also reflected broader trends, indicating that congressional and presidential preferences over this period represented public sentiment on energy issues as well. Figure 5-3 shows Gallup Poll results over repeated samplings from September 1984 through May 2010 where respondents were asked whether protection of the environment or economic growth should receive priority given that the other would suffer. Although the move toward greater interest in economic growth is not a continuous progression, the trend is evident. As the figure describes, while people preferred environmental protection to economic growth at almost a four to one ratio in 1991, the drift toward economic growth is accelerated beginning in 2000. By early 2010, the ratio dips below one, indicating for the first time in the poll's history that more people actually favored economic growth over environmental protection. Even after the *Deepwater Horizon* spill, when the public's interests shifted back toward the environment, the relative imbalance was nowhere close to that displayed in the wake of Exxon Valdez. While Gallup later began to ask respondents specifically about prioritizing environmental protection or energy production, it only did so beginning in March 2001 and so the data are less instructive. Even so, except for a move back in 2007, these polls display a general shift toward greater

emphasis on development relative to environmental protection as well. In the first year of the poll, 52% placed greater priority on the environment relative to 36% for energy production. By March 2010, only 43% favored environmental protection while 50% placed precedence on developing energy supplies. Like the former poll, at the end of May after the oil spill, preference for the environment had again overtaken development, and the spread between the two was again 16 percentage points as it had been when the poll was first created in 2001 (Gallup 2010).

Figure 5-3 – Gallup Opinion Poll Results Measuring Preference for Environmental Protection or Economic Growth (1984 – 2010)



Notes: Data from Gallup polls taken between 1984 and 2010 which asked “With which of these statements about the environment and the economy do you most agree – [ROTATED: protection of the environment should be given priority, even at the risk of curbing economic growth (or) economic growth should be given priority, even if the environment suffers to some extent?” Preference for Environment Over Economic Growth is a ratio computed by dividing the percent of people that placed greater importance on environmental protection by the percent that preferred economic growth. Source: Gallup. 2010. *Energy Environment*. Poll. <http://www.gallup.com/poll/137888/Energy-Environment.aspx>.

Political Preferences as a Source of Goal Subversion

Differentiating between a productive cooperative regulatory relationship and one which reflects regulatory subversion and laxity is no easy task. It is certainly true that there exists a fine line between collaboration and subversion, and much research has attempted to detail that division since there are potential gains to both parties as well as the public from cooperative regulatory structures (see Carrigan & Coglianese 2011 for a review of this literature). Many of the mechanisms associated with more collaborative regulatory approaches—including information disclosure requirements, negotiated rulemaking, and voluntary programs—seek to alleviate the tendency for regulators to foster unnecessarily adversarial relationships with regulated entities (Bardach & Kagan 1982, Kelman 1981, Scholz 1984, 1991). Cooperative approaches typically allow firms greater flexibility in achieving regulatory goals while, at the same time, reducing both the regulator's informational demands as well as the costs associated with acquiring that information (Breyer 1984, Coglianese et al. 2004, Richards 2000). For example, management-based regulation—which mandates that firms engage in internal planning around regulatory objectives—enables regulated entities to choose strategies which best fit their organizations. At the same time, the approach places the onus on these same firms to gather the necessary information to make good choices (Ayres & Braithwaite 1992, Coglianese & Lazer 2003, Coglianese & Nash 2006).

Even when a regulator appears to treat particular incumbent regulated entities preferentially, such evidence does not necessarily imply that the agency is captured by those same organizations (Carpenter 2004, Carpenter et al. 2009). Rather, given a history of solid interactions with certain firms, even a public spirited regulator will favor them if it is attempting maximize public welfare. Faced with an influx of independents and congressional legislative action intended to

stimulate deep water exploration, Offshore Energy's decision to focus more of its dwindling budgetary resources on inexperienced actors while relaxing its oversight of those with whom it was most familiar represents in many ways a clear application of this logic. Regardless of whether subsequent analysis indicated that newcomers were not more prone to spills, the decision to shift is properly evaluated within the context of available data and the common perception that independents were not as safe when MMS actually made the decision. Further, the circumstances under which MMS did so exactly mirror its decision to participate with established producers at least 10 years prior—an emerging technology where all players had little knowledge of how to predict or overcome potential obstacles.

Thus, Offshore Energy's decision to center its inspection efforts on new industry players given the changing conditions of oil and gas production in the 1990s appears both consistent with its previous behavior when faced with untested technologies and plausible even if it were a regulator whose intent was to maximize public welfare. Further, it would explain why in justifying its collaborative stance with the major producers, MMS pointed repeatedly to the industry's excellent safety record (Bonora & Gallagher 2001, p. 9; Francois & Bonora 1998; Minerals Management Service 1995, p. 43; Minerals Management Service 2002, p. 108; Quarterman 1998; Subcommittee on Interior Appropriations, Committee on Appropriations 1995, pp. 481; Velez 1998).

Regardless, the 2008 and 2010 DOI memoranda, particularly the latter chronicling the activities of members of Offshore Energy's Lake Charles district office, provide reason to suspect that MMS compromised its regulatory charge, at least in specific cases. The fact that relationships between oil and gas workers and MMS employees “were formed before they joined industry or government” (Kendall 2010b) certainly implies that these individuals were likely to

share some common ground in their perceptions of offshore operations and safety. This does not mean that there was necessarily even any conscious intent that drove these views. As acting Inspector General Kendall explained, “the MMS employees I have met who have come from industry are highly professional, extremely knowledgeable, and passionate about the job they do” (Kendall 2010b). Still, the well-known centrifugal forces that can drive regulators in the field to empathize with their industry counterparts would seem to be important factors in understanding the dynamics of the interplay between MMS and the oil and gas industry (Kaufman 1960, Selznick 1984). In fact, Director Birnbaum’s testimony at the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling hearings implies that a mutual understanding was inherent to the job. As she described, “the training necessary to understand the operations of oil and gas drilling rigs and platforms is not available in schools. It’s something like being an auto mechanic. In order to understand how things work, you have to spend some time under the hood” (Birnbaum 2010b). In a sense, part of the purpose of utilizing collaborative regulatory approaches is to facilitate such shared conceptions.

However, even to the extent its behavior represented more subversion than productive collaboration, MMS’s decision to cooperate was not simply a choice predicated on its employee’s relationships with regulated entities. Rather, the examination of the changing political and social environment surrounding the agency presents clear evidence that Offshore Energy’s decision to collaborate with majors was tied to political decisions associated with oil and gas policy. In fact, the industry conditions which drove MMS to focus attention on independents and engage majors to jointly develop standards for deep water were largely precipitated by specific actions of Congress and the president. President H.W. Bush’s wide reaching moratorium in 1990—which encouraged majors to shift attention to exploring foreign

sources of oil and gas—was certainly at least partially responsible for the influx of independents in the early 1990s. Soon after, the Deep Water Royalty Relief Act permitted royalty relief with the explicit goal of encouraging deep water drilling even when the technology was not available to support it safely (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011). As recounted in MMS’s 2005 Budget Justification, this law “triggered record-breaking lease sales in 1997 and 1998...and opened the door to increased deepwater production” (Minerals Management Service 2004, p. 80).

In addition to creating the conditions under which it became necessary to collaborate with the oil and gas industry, MMS’s political principals broadly encouraged the agency’s efforts in this regard. The broad array of awards that MMS received for its innovative regulatory methods in the mid to late 1990s are a testament to the political support it received. As MMS’s foray into negotiated rulemaking suggests, in many cases, such efforts were even directly prompted by political policy programs. Furthermore, such prompting was not necessarily solely relegated to the Executive Office or Congress. The OCS Policy Committee which, in 1993, stressed the need for MMS’s strategy with regard to oil and gas development be “regenerated based on consensus” incorporated the views of broad set of interested parties (Minerals Management Service 1994).

In some cases, efforts by Congress and the president to manage MMS’s actions were even more direct. The 2006 Gulf of Mexico Energy Security Act which mandated that Offshore Energy—in one year—offer over eight million acres of Gulf property for lease to oil and gas companies presents one example. Yet, even prior to the mid-1990s, the executive and legislative branches exerted significant control over Offshore Energy activities. Coupled with President Clinton’s Executive Order 12,839 which mandated agency staff reductions, President H.W. Bush’s 1990 ban of drilling in many areas prompted MMS to close its Atlantic office and greatly

downsize its Pacific and Alaskan operations. In addition, the directive forced Offshore Energy to buy back leases it had already sold in Florida. At the same time, Congress added oil spill prevention functions to Offshore Energy's set of responsibilities through the Oil Pollution Act of 1990. It also began attaching riders to Department of the Interior appropriations bills to prohibit MMS from engaging in lease sales in portions of the Gulf of Mexico, Atlantic coast, and Alaska not covered by President Bush's 1990 proclamation.

In addition to directly impacting the agency's regulatory strategy, at a broader level, the historical patterns of presidential and congressional policy decisions suggest MMS followed its political mandate even if one believes the group overemphasized expansion of offshore oil and gas production during its last 15 years. As described, beginning by at least the mid-1990s, congressional and executive attention was focused on exploration, production, and revenue collection, with little regard for MMS's regulatory mission. Weakening presidential moratoria and a pattern of lawmaking after the Oil Pollution Act that emphasized production provided clear direction to MMS on political priorities. The complete absence of congressional hearings focused on regulatory issues coupled with appropriations decisions that concentrated budgetary increases on Offshore Energy's Resource Evaluation and Leasing and Environmental programs provides further evidence of the importance placed on oil and gas production relative to safety. Moreover, public opinion data appears consistent with presidential and congressional preferences as well. The Gallup poll results indicate that during the latter half of the 1990s and throughout the 2000s, public preferences also shifted toward favoring expanded production. In addition to being concordant with the actions of relevant political actors, this evidence further supports the notion of a more general desire to place less emphasis on environmental protection. MMS Director Luthi's comments associated with a controversial lease sale in Alaska's Chukchi Sea in

2008 show a clear awareness of this shift. He stated, “Our nation’s demand for energy is increasing. Meeting that demand through carefully managed domestic production has to be a priority. Our first priority, though, is that all activity on the OCS be conducted safely and in an environmental responsible manner” (2008).

One implication of the shift in political and public preferences beginning in the early to mid-1990s is that it makes determining whether MMS’s behavior reflected productive cooperation less consequential. To conclude MMS subverted its regulatory mission for its development function requires the simultaneous acknowledgement that it was—in all practicality—fulfilling its mandate and supporting the public interest by doing so. In other words, in order to choose a path which limited drilling and emphasized safety, MMS would have needed to do it in the face of opposing statutory, political, industry, and public pressure. From this perspective, it is perhaps not surprising or alarming that some scientists at MMS felt that the potential environmental consequences of drilling were not being given enough consideration (Eilperin 2010, Urbina 2010b). In attempting to offer 5.8 million previously prohibited acres of Gulf property for lease through the Gulf of Mexico Energy Security Act in 2006, it might be more surprising if environmental risks were actually being adequately considered. Whether, in retrospect, one believes that MMS adopted an overly collaborative approach to regulating or downplayed environmental risks, the fact remains that MMS’s stance was prompted by political and social pressure to expand oil and gas production on the OCS.

Conclusion

Chapter 4 began the study of the creation and development of MMS by asking whether assigning tax collection to the agency impeded its ability to regulate adequately. Examining

data associated with congressional oversight and agency appropriations, the evidence revealed that MMS's Revenue Management group had little impact on Offshore Energy's Regulatory program. Rather than subverting regulation to support tax collection, if anything, Offshore Energy actually impeded the ability of the agency's tax collectors and auditors to achieve their organizational goals. Moreover, claims that a congressional decision to allow MMS to offset its regulatory appropriations through a tax increase further exacerbated the conflict are not supported by an inspection of the details of the congressional authorization. In addition to setting the permissible amount in advance and at a level well below the total additional revenue generated by MMS through the tax increase, Congress structured the revenue offset such that Offshore Energy's incentives were actually to act as a more stringent regulator.

This research has also revealed just how disconnected the two groups were. The strict division between Offshore Energy and Revenue Management with respect to location, tasks, and processes was a deliberate feature of MMS's design—a design which was a reaction to USGS's integrated structure which caused it to subvert tax collection for science. However, while successfully mitigating the potential for goal conflict and subversion, in their separation, MMS's structure simultaneously impeded the ability of the two groups to coordinate their underlying tasks. The failure to coordinate substantially restricted Revenue Management's capacity to perform its audit functions.

On the other hand, combining resource evaluation, leasing, and regulatory functions in Offshore Energy represented a reversal of the division of these tasks between BLM and USGS, a separation which facilitated jurisdictional problems as well as Interior's inability to prevent oil companies from fraudulently removing oil without reporting it as production (Department of the Interior 2010, p. 6). In merging the tasks to overcome previous coordination problems, the

Resource Evaluation, Leasing and Environmental, and Regulatory programs were “tightly interconnected” where all programs simultaneously supported the others (Department of the Interior 2010, p. 6). Unlike the division between tax collection and regulation, this structure created the potential for goal conflicts within Offshore Energy, conflicts which might be predicted to cause the subversion of a subset of these functions. As a result, it is not surprising that those who have bemoaned the perceived regulatory laxity of MMS—embodied in its cooperative approach and relative disregard for environmental concerns—have simultaneously suggested that mingling oversight and development functions led to this lassitude (Eilperin & Higham 2010, Neill & Morris 2011). Moreover, this connection between organizational design and supposed regulatory torpor has spurred the subsequent reforms, the logic of which is embodied in President Obama’s comment, “That’s why we’ve decided to separate the people who permit the drilling from those who regulate and ensure the safety of the drilling” (Obama 2010c).

Yet, while the interconnectedness of MMS’s Offshore Energy division did create the conditions for conflict, neither the logic associated with claims related to the agency nor the literature on goal ambiguity more broadly reveals exactly why it is thought to have resulted in the subversion of the regulatory mission. Why did Offshore Energy not decide to subvert its oil and gas leasing goals instead? The research in this chapter has attempted to shed light on this question. In doing so, the evidence has indicated that political and social forces held important roles in explaining decision making at MMS. In keeping with the political science literature examining the mechanisms of political control, this analysis has revealed that Congress and the president wielded a wide array of instruments to define priorities at MMS. These included agency directives, executive orders, and presidential proclamations as well as statutes, budgets,

appropriations riders, and congressional hearings. Collectively, they point to the unmistakable imprint of political will on MMS's activities and decisions while it operated.

The investigation has also revealed that the signs of regulatory laxity exhibited by the agency were also encouraged and often directed by political principals. While patterns of lawmaking and presidential initiatives also significantly affected the scale and emphasis of MMS's operations prior to the mid-1990s, the indicators of MMS's perceived recklessness can be directly tied to legislative and executive actions over the last 15 years of MMS's existence. Both the influx of independents as well as major oil and gas producers' push into deep water—which made it necessary for MMS to adopt a more collaborative regulatory stance—were largely driven by presidential action and congressional legislation. Programs such as President Clinton's National Partnership for Reinventing Government and accolades including its Vice Presidential Hammer Awards encouraged MMS's efforts to incorporate alternative regulatory approaches. Moreover, the desire among its political principals for increased offshore oil and gas development beginning in the mid-1990s as revealed through patterns of congressional hearings, weakening moratoria, appropriations, and statutes pressed MMS to focus more attention on its leasing and resource evaluation functions at the expense of its safety and environmental mission. Laws such as the Gulf of Mexico Energy Security Act were even more explicit in directing the balance between development and regulation at MMS. The recommendations of advisory committees such as the OCS Policy Committee and Gallup polls conducted over the period both confirm that support for MMS's shift toward a more interactive regulatory approach and focus on offshore development was not confined to political preferences. Rather, they reveal a unified push, combining political and societal desires, for MMS to help secure U.S. energy independence by encouraging offshore oil and gas exploration.

Such evidence raises doubt about the potential for Executive Order 3299—which separated MMS into three agencies based on the view that its “three distinct and conflicting missions...must be divided” to encourage “effective enforcement, energy development, and revenue collection” (Office of the Secretary of the Interior 2010a)—to substantially improve how the government oversees oil and gas operations on federal lands. Coupled with the evidence that revenue management had little impact on regulatory enforcement, the fact that MMS’s approach to offshore energy management was endorsed and often triggered by political and social actors demonstrates that the issues were not relegated to the organization’s internal operations. To the extent that separating the leasing and regulatory functions better insulates agency officials from acceding to political and public pressure, carving up the agency can make a difference. However, facing a unified push for development and a broad array of mechanisms for political overseers to influence oil and gas policy priorities, it is unclear how a single purpose regulator’s actions would have been substantially different. Moreover, even if a more independent regulator would have been able to resist—to some degree—its principals’ strong predilections for cheap energy, criticism would have instead centered on whether MMS was a rogue agency that needed to be corralled. While in hindsight it is easy to pin the *Deepwater Horizon* tragedy on MMS and its organizational design (Carrigan & Coglianese forthcoming), this research has shown that the reality is much more complicated.

At the same time the Order brings with it limited and uncertain benefits, the story of the formation of MMS does provide a glimpse of what the costs might be. Reorganizations, particularly on the scale of Order 3299, themselves cost money and can impose substantial disruptions on employees. Still, the most important costs may be those associated with ongoing implementation of the tax collection and oil and gas management missions. If history is any

guide, the reorganization is likely to expose revenue management to the more extensive coordination problems associated with onshore collections which were revealed in independent examinations of Interior's oil and gas tax processes (Government Accountability Office 2008, Subcommittee on Royalty Management 2007). In addition, the decision to divide Offshore Energy may resurrect the extensive coordination failures and in-fighting that characterized BLM and USGS prior to MMS's creation (Committee on Appropriations 1982). Even Secretary Salazar's July 2010 implementation report recognized the inherent limitations in trying to create separate offshore planning and operations oversight organizations. Even after the protracted restructuring process was completed, the plan emphasized the need for the two to maintain ongoing "close program coordination" to operate effectively (Department of the Interior 2010, p. 6).

Combining Ambiguity, Coordination, and Politics in Part III

The academic research examining both the policy process and goal ambiguity described in Chapters 3 and 4 has demonstrated how politics can help us understand why agencies plagued with conflicting goals can exist in the first place (Lee et al. 2009, Mayhew 1974, Pressman & Wildavsky 1984, Sabatier 1999, Stazyk & Goerdel 2010). However, the role of politics in this chapter has been less associated with its effects on MMS's initial structure (although that is important as well) and more associated with its impacts on subsequent legislation and executive action in driving the balance between multiple goals. While not denying the possibility that Offshore Energy faced internal conflicts given the close proximity of its development, leasing, and regulatory functions, the MMS case underscores the important point that political forces play a key role in determining how an agency balances between competing missions. In this regard,

the research supports the extensive literature examining the mechanisms that politicians can implement to control government agencies even though that scholarship is not specifically focused on agency goal ambiguity (McCubbins & Schwartz 1984, Moe 1987, Waterman 1989, Weingast & Moran 1983, Wood & Waterman 1991). Moreover, the analysis has revealed that political action may not be subversive in the sense that it drives a wedge between the regulator's actions and public interest as the traditional literature on iron triangles emphasizes (Dodd & Schott 1979, Gais et al. 1984, Lowi 1969). Rather, as the case of MMS has shown, the shifting balance (or imbalance) might be supported or in some cases even driven by the public or a broad coalition of interests.

In incorporating roles for political and social preferences, this study of MMS has revealed how important it is to take an inclusive approach to studying regulatory agencies beset by goal ambiguity and conflict. The research has demonstrated that the need to coordinate the associated tasks helps to explain why joining conflicted goals can still be optimal. It has further shown that organizational design can help us predict which of these competing factors may be the more important impediment to a multiple-purpose regulator's performance. Finally, the analysis underscores how important politics, and not just internal organizational dynamics, are to understanding how such agencies define priorities in the face of conflicting goals.

In Part III, I integrate these features—goal ambiguity, task coordination, and political preferences—into a theoretical discussion with the purpose of examining multiple-purpose regulatory agencies from this more holistic perspective. In doing so, I also explicitly incorporate a fourth element—the connection in how social and environmental conditions affect the functions and their associated goals—an ingredient in the story which has occupied a less central role to this point. As we will see, understanding whether external shocks affect achievement of

the goals in similar or dissimilar ways greatly impacts the tradeoff presented by the simultaneous presence of goal ambiguity and task coordination exhibited in multiple-purpose regulators. As a result, correlations between environmental factors which may be out of the agency's direct control are nevertheless important for political principals to recognize in designing agencies which can best implement their preferences. As both the cross-sectional analysis in Part I as well as the examination of the political history of MMS in Part II have demonstrated, social scientists would do well to make a greater effort to consider goal ambiguity, task synchronization, and political control simultaneously. Through the theoretical model developed in Chapter 6 and further explored in the concluding chapter, I do exactly that.

Part III

Internal and External Influences in a Theory of Multiple-Purpose Regulators

Chapter 6

Environmental Context and the Political Choice to Combine Purposes

The discussion in Part II of MMS's almost 40 year tenure as both the government's oil and gas tax collector and offshore manager and steward has demonstrated just how important political influences are to the functioning of multiple-purpose regulators. Beginning in the mid-1990s, unified congressional and presidential interest in energy security largely overshadowed concern for whether offshore operations were safe. Wielding a wide array of instruments of control, political principals impacted how MMS's Offshore Energy group viewed its mission, balanced its workload, and approached regulating offshore operations. These preferences were shared among the broader public as reflected in public opinion surveys and the recommendations of interest group advisory panels. In some ways, MMS was a victim of the industry's success in limiting spills prior to the devastating Gulf oil disaster. The solid record particularly beginning in the late 1970s made events like the 80,000 to 100,000 barrel spill in the Santa Barbara channel in 1969—which until the Gulf spill was the largest offshore accident in U.S. history—and even Exxon Valdez a distant memory (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011, p. 28-29). Perhaps reflective of a certain level of complacency, the widely held belief that offshore drilling was safe was poignantly captured in President Obama's pronouncement, shortly before the Gulf oil spill, that "oil rigs today generally don't cause spills" (Obama 2010b).

The examination in Part II has further demonstrated that in addition to impacting ongoing operations, political and social preferences can also drive initial organizational decisions. Responding to vivid examples of oil and gas tax evasion chronicled in the 1982 Linowes Commission report, MMS's creation—directed by the Department of the Interior (Interior) and

formalized through the Federal Oil and Gas Royalty Management Act passed in January 1983—was largely an attempt to insulate oil and gas tax collection from being subverted by either industry, political, or internal pressure. In creating an independent tax collector within MMS, Interior and Congress sought to design the agency so that the revenue management function could no longer be neglected as was believed to be the case at the U.S. Geological Survey (USGS).

At the same time, the design of Offshore Energy reflected less concern about subversion and a much greater desire to foster coordination. As described by the Director of GAO’s Energy and Minerals Division at a 1981 hearing before the House Committee on Interior and Insular Affairs, “The fragmentation of authority and accountability for implementing the mineral leasing laws contributes to the weakness of Federal minerals management. Such a weakening factor is central to any consideration of how to improve the revenue potential of Federal resources” (Peach 1981, p. 6). Not surprisingly, in an attempt to eliminate the “fragmentation” that defined the relationship between Bureau of Land Management (BLM) and USGS as co-managers of oil and gas operations, Offshore Energy was constructed such that the offshore property evaluation, leasing, and regulatory functions were closely intertwined.

Political Preferences and Agency Structure

Far from an observation confined to MMS or the distant past, even today, reorganizations continue to shape how politicians respond to salient events in regulated industries. As Harold Seidman declares, “Reorganization has almost become a religion in Washington” (1998, p. 3). In addition to the *Deepwater Horizon* tragedy, as outlined in Chapter 1, the reforms borne from the financial crisis and Japanese nuclear meltdown have included prominent roles for redesigning

the underlying governmental infrastructure as well. From breaking up MMS to creating an independent financial watchdog to oversee consumer protection to severing the connection between the Japanese nuclear regulator and its Ministry, reorganization is commonly used by politicians to fix problems and improve administrative performance. And it can be chosen as the remedy regardless of whether the initial organization caused the problems (Kettl & DiIulio 1995, Manns 2002, Wilson 1989, p. 264-268). In fact, these restructurings can sometimes be merely symbolic reactions to salient events, where the need that politicians feel to do something trumps the need to do something that helps the situation (Carrigan & Coglianese forthcoming, Kingdon 1984, Mayhew 1974, Wilson 1989, p. 265).

Still, this dissertation has demonstrated both through the statistical analysis in Part I as well as the case study in Part II that organizational design is an important factor in explaining the behavior and performance of multiple-purpose regulators. As Seidman continues, “Organization and procedural arrangements are not neutral...Organization is one way of expressing national commitment, influencing program direction, and ordering priorities” (1998, p. 12). Even so, its importance in the context of agencies that combine regulatory and non-regulatory purposes is not straightforward. Not only does organizational design affect the success of the organization in achieving goal clarity and coordinating the underlying tasks—two forces which can work in opposition—the structure also impacts external political and social efforts to direct the organization’s priorities. Given these conflicting pressures, how do we know when multiple-purpose regulators are likely to perform well? Further, can we describe the conditions under which we might expect to see regulatory and non-regulatory functions combined?

In this chapter, I explore these questions through a formal theoretical analysis of the politician’s decision about how to assign two policy functions, one regulatory and the other non-

regulatory. Although the insights derived from this chapter are potentially applicable to the decision to combine tasks at agencies more broadly, the statistical analysis in Chapter 3 in particular demonstrated that the relative poor performance of agencies that combine regulatory and non-regulatory functions is not necessarily true of all agencies. As a result, whether the conclusions derived from this chapter are applicable to the wider set of agencies that combine purposes is left to future inquiry.

However, while the model presented in this chapter is focused on multiple-purpose regulators specifically, it does speak both to the decision to divide regulatory and non-regulatory functions between agencies as well as the choice to separate them within one agency. The study of MMS's Revenue Management and Offshore Energy groups in Chapter 4 has showed that even single agencies can mitigate the potential for goal ambiguity if the groups are structured with enough separation between them. This division can be physical or geographical. Moreover, it can be created by partitioning workflows and systems or simply because the employees hold different skill sets. For simplicity in presentation, the analysis in this chapter focuses on the politician's decision to form one agency or two, much like the 1982 decision to create MMS by merging the BLM's role as offshore developer with USGS's oversight responsibilities. However, one can also think of it as a choice to structure the agency such that its functions are divided or joined within the organization—similar to the decision to partition the tax collection and offshore energy tasks which was a feature of MMS's original design.

To preview the results, I show that not only does a politician's partiality for achieving one of the goals impact resource allocation decisions, but also that the relative preference for the joint success of both the regulatory and non-regulatory functions greatly impacts the optimal choice of agency structure. In fact, as the political principal's desire for success on both purposes

increases, the likelihood that combining roles is the best option to maximize the principal's utility also rises. Multiple-purpose agencies are best able to coordinate the activities of each purpose in the face of changing exogenous environmental conditions—including, for example, the influx of independent oil and gas operators and increasing interest in deep water exploration which affected MMS's regulatory strategy in the mid-1990s. As a result, these agencies are also best able to shift resources based on their knowledge of external circumstances in an attempt to achieve both policy goals.

At the same time, supporting the analysis in previous chapters, I also demonstrate that the principal's expected utility from combining purposes declines in the face of goal ambiguity since the potential that the agency will misread the politician's relative preference over the goals increases. The possibility for such ambiguity which is introduced by combining functions represents a drag on the agency's operational performance and, thus, is an impetus for separating tasks. Furthermore, as the degree of ambiguity increases, the likelihood that a multiple-purpose regulator will be best able to maximize the politician's utility declines.

Yet, the same environmental, industry, and social shifts—often exogenous to the agency—that make task coordination important when the principal values success on both goals also have implications for evaluating the internal organizational tradeoffs faced in combining or separating functions. Certainly, MMS's leasing, tax collection, and regulatory functions were not uniformly impacted by the changing character of offshore oil and gas exploration during the 1990s (Minerals Management Service 2004, p. 80). Through the model developed in this chapter, I show that the correlation between how these external factors affect the operations of the two functions helps define the limits for assigning the tasks to one agency. This interplay also shapes the relative importance of task coordination and goal conflict in affecting the politician's

decision to combine or separate the functions. According to the analysis presented here, the value that the multiple-purpose regulator offers in terms of its ability to coordinate tasks is highest when the underlying policy areas are uncorrelated. Since a correlation close to zero means that environmental shocks can affect achievement of the two goals in undefined ways, the ability to adjust task allocations is most valuable under these conditions. Yet, it is also here that goal ambiguity can play an important role in undermining multiple-purpose agency performance. In contrast, as the effects of changing industry or social conditions associated with the relevant policy space begin to impact the possibility for success on goals in similar ways, the ambiguity associated with joining functions becomes less compromising. A high positive correlation mitigates the possibility that ambiguity surrounding the politician's preferences can cause the multiple-purpose regulator to choose as unwelcome allocation.

My analysis thus indicates that when it comes to assigning regulatory and non-regulatory functions in the same policy space, there are few simple choices. If the relationship between the purposes is such that the effect of an exogenous shock on the achievement of the associated goals is uncorrelated, the importance of task coordination—which can be best achieved when the functions are merged—increases. Even so, the drag that goal ambiguity can impose on multiple-purpose regulators is likely to be greatest in this situation as well. On the other hand, when changes in environmental conditions tend to affect goal attainment in similar ways, the detrimental effects of goal ambiguity are muted but the gains from coordination are lessened as well. In this way, the model results are supportive of the statistical analysis in Chapter 3 as well as the study of MMS in Chapters 4 and 5 which showed that an evaluation of multiple-purpose regulators requires a simultaneous understanding of competing roles for coordination and conflict.

However, in addition to delineating more formally the tradeoff that exists with multiple-purpose regulators, the analysis in this chapter also demonstrates when we might expect to see regulatory and non-regulatory purposes combined. Although the results suggest that it is typically optimal to keep separate those goals whose attainment is differently impacted by environmental changes, they simultaneously show that a large region exists where the decision to merge functions is more nuanced. This choice also relies heavily on the principal's relative preference over the achievement of each goal individually and jointly. Thus, we should be hesitant to conclude that multiple-purpose regulators should be broken up simply because their goals conflict. Such a conclusion overlooks the peculiarities of the policy space, the underlying relationship between the tasks, and social and political preferences—all of which interact to define the best strategy for achieving even outwardly competing goals.

The remaining sections of this chapter proceed as follows. First, I outline the context for the theoretical framework developed and examine its assumptions. Second, I introduce the structure of the model and solve for perfect Bayesian equilibria both when the functions are combined and when they are separated. Next, in comparing the principal's expected utility in the two cases, I derive the factors that define the likelihood that the politician is better off merging the functions in one agency relative to splitting them up. Finally, I discuss the implications for the findings both in this specific context as well as within a broader discussion of regulatory design. All proofs and more involved derivations can be found in Appendix B.

Multiple Functions and Exogenous Shocks

As the previous section has suggested, the analysis in this chapter incorporates a prominent role for the contextual features of the policy space in explaining the performance of multiple-

purpose and single purpose agencies. In particular, how environmental shocks impact each function—and the relationship between those effects—explains how competing roles for ambiguity and coordination interact to help define multiple-purpose regulators' behavior. By adding this feature, the model accounts not only for the internal operational and external political forces impacting agency behavior, but also for the industry and social forces that simultaneously drive performance. The sometimes diverging effects of evolving industry or social conditions on the achievement of regulatory and non-regulatory goals can be clearly seen through the experience of MMS. As noted in Chapter 5, an influx of independent oil and gas operators and increasing interest in deep water drilling in the mid-1990s had a profound effect on MMS's regulatory approach, prompting the agency to focus more attention on small firms while collaborating with majors to develop deep water standards.

However, this industry shift did not similarly impact the tax collection and leasing groups at MMS. Quite the opposite, these developments, fueled by the Deep Water Royalty Relief Act, “triggered record-breaking lease sales in 1997 and 1998” and “generated billions of dollars in bonuses and rents” (Minerals Management Service 2004, p. 80). Increased industry interest in Gulf oil and gas exploration meant greater demand for offshore property leases and a massive influx of tax revenue. Thus, what was an impediment to the Regulatory program, forcing it to reinvent its regulatory approach, was simultaneously a boon to MMS's Royalty Management and Leasing and Environmental components.

Such variation in the effects of exogenous changes in the policy space is not simply relegated to the experience of MMS in the mid-1990s. For example, it is not hard to imagine that the U.S. Forest Service's duties in preserving wilderness, enabling visitor access to such resources, and producing timber could be differentially impacted by wildfires (Kaufman 1960,

Wilson 1989, p. 64). Moreover, the former Immigration and Naturalization Service's (INS) role in repelling illegal immigrants would certainly be made more difficult by developments abroad which made re-locating to the U.S. more attractive (Manns 2002). At the same time, INS's efforts to ensure the necessary inflow of foreign agricultural workers would be made easier by such a development.

Even the March 2011 earthquake and tsunami in Japan which directly caused the nuclear crisis has had differing impacts on the nuclear related government functions. Much like the onset of the Gulf oil spill in April 2010 which almost immediately prompted President Obama and his staff to suspend deep water drilling in the Gulf of Mexico (Obama 2010c)—a ban which was only lifted in October 2010 (Salazar 2010)—the nuclear disaster has all but shut down the nuclear industry Japan. In addition to closing Fukushima which was the location of the accident, less than 5% of the country's remaining reactors were operating as of March 2012 (Fackler 2012, Joskow & Parsons 2012). Moreover, many in Japan oppose restarting these idle units at all. The net result is that while NISA was disbanded for its perceived regulatory laxity (Onishi & Belson 2011), its successor, the Nuclear Safety Agency, has so far faced an environment which, because nuclear power plants are not operating, is by definition more conducive to maintaining safe operations. At the same time, because of the opposition, the Ministry of Economy, Trade and Industry's ability to promote nuclear power is made more difficult.

Despite its importance to understanding multiple-purpose regulators, the interrelationship between how environmental shocks affect the functions has been largely ignored in the few formal studies of the effects of combining purposes in government agencies (Dewatripont et al. 1999, 2000, O'Connell 2006, Ting 2002). For example, in his 2002 article, Michael Ting assumes the tasks are independent and instead focuses attention on the divergence in policy

preferences between the politician and the agency, an assumption which “allows the strategic aspect of task allocation to be studied in isolation of technological factors” (2002, p. 366). Anne O’Connell examines the value of having multiple agencies simultaneously work on the same function and so the correlation in the effect of shocks on different tasks is by definition not an important consideration (2006). Dewatripont, Jewitt, and Tirole study the role of assigning multiple tasks to one agency using a career concerns model which—unlike multi-task models focusing on explicit incentives (see, e.g., Holmstrom & Milgrom 1991)—assumes an agent’s effort is driven by its ability to increase the individual’s marketability and future wages (1999, 2000). While they directly incorporate into their model the correlation between the employee’s ability on one task and the second, at the same time, shocks affecting the performance of each task are assumed to be independent (Dewatripont et al. 1999, p. 203). Even in the literature examining optimal private firm design with multiple products, interactions between external signals associated with the markets are often ignored for simplicity (Alonso et al. 2008, Rantakari 2008).

Thus, one of this study’s distinguishing features is that it directly incorporates the correlation between the functions—measured by extent to which external shocks similarly impact the achievement of each goal. Moreover, although goal ambiguity has been studied intensively as described in Chapter 3, I know of no other study which attempts to model its effects on organizational performance formally, possibly because the interplay between the functions is typically assumed away. For example, in the Dewatripont, Jewitt, and Tirole study (1999), ambiguity is important not because it directly affects agency performance but rather because it weakens the market’s ability to assess the employee’s ability by observing output.

Exploring the Assumptions of the Model

To focus attention on the operational effects of goal conflict and underlying task coordination by explicitly modeling the interplay between the functions, the analysis that follows makes two important assumptions—one about the agency and one about the politician—which distinguish this research from some other formal studies of the relationship between political principals and government agencies. A central feature of the delegation literature is that the government agency's preferences diverge from that of its political principals (Bendor & Meirowitz 2004, Miller 2005, Moe 1987). In fact, this characteristic is also what drives the results in the studies of multiple-purpose agencies described above (Dewatripont et al. 1999, 2000, Ting 2002). In contrast, I assume that the agency seeks to maximize the political principal's utility. In this way, the agent is a faithful servant to the principal.

At first glance, such an assumption may appear extremely limiting. However, the examination of MMS in Chapter 5 suggests that, at least to a first approximation, the simplification might reasonably reflect reality in some cases. While it is possible that Offshore Energy was not a willing participant, to the extent officials within MMS downplayed environmental concerns and adopted an overly collaborative relationship with industry, these actions reflected a social and political desire to do so. In fact, as the literature in Chapter 5 highlighted, political principals can maintain significant control over agency activities. Thus, it does not necessarily matter that the agency shares the politician's preferences. Rather, if the agency is unable to resist the oversight of its political superior, it might implement the principal's preferences regardless. In their study of seven agencies, B. Dan Wood and Richard Waterman conclude, "We believe this evidence for active political control is so strong that controversy should now end over *whether* political control occurs...Future research should turn toward

exploring the *determinants* of political control” (Wood & Waterman 1991, p. 822). If this is in fact the case, assuming agents attempt to implement their principal’s preferences would not be unreasonable.

Furthermore, a substantial literature examining what inspires agency employee performance has forced us to appreciate that attempting to characterize public servants by suggesting that they are interested in avoiding their duties or maximizing their private gain is simply not accurate (Bendor et al. 2001, DiIulio 1994, Golden 2000). Rather, analysts have uncovered an impressive array of motivations that can explain the behavior of agency personnel in different contexts. These include the desires of some to increase their spheres of control (Carpenter 2001, Mueller 2003, Niskanen 1971), hold on to their jobs (Leaver 2009, Wilson 1980), and uphold their agency’s mission (Gailmard & Patty 2007, Kelman 1987, Prendergast 2007, Wilson 1989). For example, Timothy Besley and Maitreesh Ghatak show that agency employees inspired by the organization might be resistant to change, but they are also unlikely to require incentive contracts (2005). Similarly, one might predict that agency personnel focused on keeping their jobs would also be more willing to please their principals. At a minimum, these studies suggest the relationship between the principal’s preferences and those of the agency can be closely aligned, particularly when the politician supports the agency’s mission.

Even so, my primary purpose for assuming that the agency seeks to maximize the politician’s utility is that it enables me to focus particular attention on the tradeoff between goal ambiguity on one hand and better task coordination on the other. Thus, what drives the divergence between the principal and agent is not preferences but rather information. However, while I do incorporate the standard assumption used in models of delegation that the agency has greater policy area expertise and access to information (Bendor & Meirowitz 2004, Miller 2005),

it is not just the private data that the agency possesses which drives the decision to combine or separate the regulatory and non-regulatory tasks. Rather, it is also that the political principal does not clearly communicate her preferences that helps explain why multiple-purpose regulators may perform poorly. It is this insight that helps propel the goal ambiguity literature described in Chapter 3 (Chun & Rainey 2005a, Lee et al. 2009, Stazyk & Goerdel 2010). Whether the source of that inability or unwillingness to clearly communicate preferences arises from the political environment (Sabatier 1999), the policy process (Pressman & Wildavsky 1984), or electoral concerns (Mayhew 1974), the end result is that the agency will face some uncertainty in attempting to implement the principal's preferred policy mix. As a result, even assuming that agencies attempt to implement their principal's ideal allocation, the choice of whether to combine or separate tasks is by no means straightforward. Thus, while allowing the agency's preferences to stray from the politician's desires is certainly a useful extension to this analysis, holding that factor constant here allows me to focus specifically on the implications of the insights derived in this dissertation to this point.

In addition to assuming that the agent attempts to implement the preferences of the principal, I further simplify the analysis by presuming that the agency answers to just one principal. As authors of the reorganizations of the U.S. financial infrastructure, Japanese nuclear operations, and Interior's offshore oil and gas operations, it almost goes without saying that politicians are central to understanding whether agencies will be structured such that regulatory and non-regulatory functions are united or separated. Yet, as researchers studying the influence that Congress and the Executive Office exert over agency activities have clearly demonstrated, the preferences of the executive and legislative branches can be very different (Moe 1989, Whitford 2005). This will be particularly true during periods of divided government when the

executive resides from a different party from at least one chamber of Congress (Epstein & O'Halloran 1996, Mayhew 2005, Yackee & Yackee 2009).

When principals do not agree, the effect on the agency's priorities is not clear. Certainly, the impact depends at least partially on the relative influence of each of the principals. Even so, whether the executive branch or the legislative branch exerts more control is far from a settled issue in the literature (see, e.g., Weingast & Moran 1983, Moe 1987). Even the agency's budget—a mechanism of control traditional viewed as a source of congressional power—is subject to Executive Office manipulation derived from its ability to set the agenda (Carpenter 1996, Moe 1987, Moe & Wilson 1994). Furthermore, some theoretical research has demonstrated that the presence of multiple principals can actually weaken control (Dixit 1997, Moe 1984). Still, the empirical evidence has generally shown that Congress and the president are both able to exert influence over agencies (Moe 1985, 1990, Snyder & Weingast 2000, Wood & Waterman 1991, 1994). Moreover, when congressional and presidential desires are opposed, the agency can sometimes be severely constrained in carrying out its duties (Moe 1989).

Even so, MMS's development has certainly demonstrated that Congress and the executive—while simultaneously defining the agency's ongoing focus and leading the organizational reforms—can nevertheless agree on general priorities. Even social preferences can reflect political desires as they certainly did during at least the latter half of MMS's existence. To the extent that politicians are motivated by the desire to be reelected, they will need to be responsive to the electorate (Mayhew 1974). Furthermore, some political mechanisms for agency control—such as procedural constraints—are explicitly designed to focus politicians on those issues that are important to their constituencies (McCubbins & Schwartz 1984, McCubbins et al. 1987).

To set aside the complications highlighted above in modeling the influence of multiple principals—a topic which itself has been the subject of numerous theoretical inquiries (Martimort 1992, Stole 1997, Dixit 1997, Gailmard 2009)—I assume that the agency answers to one principal or a set of principals with consistent preferences. In this way, the structure mirrors the political and social environment facing MMS from the mid-1990s until 2010 when it was disbanded. One can alternatively think of the principal’s preferences as the end result of the political process which defines how those preferences are communicated to the agency. In either case, by making the choice to simplify the nature of the political principal, this work follows that of others studying the political decision to combine functions in a single agency (Dewatripont et al. 1999, 2000, Ting 2002). Certainly, by setting aside the possibility of interactions between competing principals, I lose some of the richness surrounding the political decision to merge regulatory and non-regulatory functions. Even so, such a structure simultaneously enables me to more clearly focus attention on how changes in political preferences affect the decision to combine or separate regulatory and non-regulatory functions. Because this is the issue which is at the core of the study in this chapter, I leave extending the model to one which includes multiple principals for future work.

Introducing the Model

Having described the core assumptions and features of the analysis, I now introduce the model more formally. The framework is a one period game in which the politician seeks to maximize her utility by assigning two policy goals to either one agency or two. To add context and more directly connect the discussion to that in Part II, I analyze the model from the perspective of the decision to combine or separate oil and gas regulatory oversight and tax

collection. While I adopt this frame simply to make the discussion more concrete, the analysis and results in this chapter apply equally well to other policy contexts. The first goal—prevent a large oil spill—is represented as R . The second goal—collect \$X billion in taxes—is T .

The politician derives utility from the achievement of both goals jointly as well as each goal individually. The political principal's payoff from success on both goals is assumed to be $1 + \delta$. In contrast, the payoff to the politician is α from success only on R , $1 - \alpha$ from success only on T , and 0 from failure on both goals. These payoffs are summarized in Table 6-1 below. To ensure that the politician positively values both goals, I assume that $0 < \alpha < 1$ which eliminates the counterintuitive possibility that the politician is indifferent between achieving the goal and failing to achieve it. In the oil and gas policy context, this assumption merely specifies that the politician is happier when an oil spill does not occur relative to the case when it does. By further assigning the payoffs to individual success on each goal, R and T , as α and $1 - \alpha$, the principal's utility is fashioned in such a way that it is straightforward to characterize her preference for one over the other. Of course, it is still possible that $\alpha = 1/2$, in which case the principal is indifferent between success in collecting taxes and in preventing a large oil spill. Thus, assigning the payoffs in this manner is not overly restrictive in the sense that it still allows every combination of relative preferences. However, as we will see, this combination makes interpreting the priority goal ambiguity that the agency faces more straightforward.

I assume that $\delta > 0$ based on similar logic. By structuring the game so that $1 + \delta$ is the payoff from joint success on R and T rather than simply δ and stipulating that $\delta > 0$, I am ensuring that the principal derives more utility from attaining both goals simultaneously relative to either individually. In other words, the principal values successfully collecting \$X billion in taxes when an oil spill is prevented more than when the same amount of taxes is collected and an

oil spill occurs. Moreover, as we will see, I eliminate the knife edge case where $\delta = 0$ to ensure that I can compute the politician's utility when δ appears in the denominator of an expression.

Figure 6-1 – Describing the Political Principal's Payoffs

		Collect \$X Billion in Taxes (T)	
		Success (1)	Failure (0)
Prevent Large Oil Spill (R)	Success (1)	$1 + \delta$	α
	Failure (0)	$1 - \alpha$	0

Notes: The value in each box represents the payoff to the politician from that combination of success or failure on R and success or failure on T . The value of α is either α_H and α_L , where $\alpha_H + \alpha_L = 1$ and $0 < \alpha_L \leq \alpha_H < 1$. While α is known to the political principal, it is not known to the multiple-purpose regulatory agency. On the other hand, the value of δ , which is greater than zero ($\delta > 0$), is common knowledge.

As explained in the previous section, the model incorporates two sources of information asymmetry. The first is associated with the politician's payoffs. While it is assumed that δ is common knowledge, α is known only to the principal. Thus, in carrying out its tasks to maximize its principal's utility, the multiple-purpose regulator—where both functions are assigned to one agency—is uncertain as to the politician's preference over R and T . This informational incongruity is the source of goal ambiguity in the model. If the agency knew α , it would simultaneously know whether the principal preferred success in preventing an oil spill or collecting \$X billion in taxes. Since it is a faithful agent, with complete knowledge of the principal payoffs, the agency would implement the politician's preferred mix. Instead, uncertainty over α raises the possibility that the priority goal ambiguity described in Chapter 3 of this study can make implementation more difficult.

To model this ambiguity in a simple way, I assume that the true value of α takes on two possible values α_H and α_L where $\alpha_H + \alpha_L = 1$ and $0 < \alpha_L \leq \alpha_H < 1$. As a result, I represent

the possibilities for the true α as α_i where $i = \{H, L\}$. I assign $P(\alpha = \alpha_i) = c$ to reflect the agency's degree of confidence regarding its belief about what the true value of α is. If, for example, the agency believes the principal's true α is α_H , then c represents how certain it is that the value is indeed α_H and not α_L which also equals $1 - \alpha_H$. Further, c is a probability and so $0 \leq c \leq 1$. However, because the set of possibilities includes two elements, c also simultaneously defines the agency's beliefs that the true value is actually α_L instead. It is simply $1 - c$. Thus, when $P(\alpha = \alpha_H) = c$, $P(\alpha = \alpha_L = 1 - \alpha_H) = 1 - c$. On the other hand, if the agency actually believes that α is α_L , now c measures the agency's degree of confidence in that belief. Now, $P(\alpha = \alpha_L) = c$ and $P(\alpha = \alpha_H = 1 - \alpha_L) = 1 - c$.

Within this framework, it is natural that c should only be able to take on values from $1/2$ and 1 instead of from 0 and 1 . This reflects the fact that if the agency believes the true value is α_H with a probability of less than $1/2$, it actually believes the true value is α_L instead. This is the case because the agency assigns a probability of greater than $1/2$ to the latter possibility. As a result, $1/2 \leq c \leq 1$ where $P(\alpha = \alpha_i) = c$, $P(\alpha = 1 - \alpha_i) = 1 - c$, and $i = \{H, L\}$.

Since the principal's payoff matrix in Figure 6-1 assigns $1 - \alpha$ to the case where an oil spill occurs but the tax collection goal is met ($R = 0 \cap T = 1$), the agency's belief about α also simultaneously defines its belief about $1 - \alpha$. In other words, when $P(\alpha = \alpha_H) = c$, $P(1 - \alpha = 1 - \alpha_H) = c$ as well. Alternatively, if $P(\alpha = \alpha_L) = c$, it follows that $P(1 - \alpha = 1 - \alpha_L) = c$. For example, let us imagine that the agency believes with probability c that the principal's true payoff from the case where there is no oil spill but sufficient taxes are not collected ($R = 1 \cap T = 0$) is α_H . Because it follows from the set of payoffs that the principal values the combination of an oil spill but sufficient tax collection ($R = 0 \cap T = 1$) as $1 - \alpha$, the agency's belief that the principal's payoff from this combination is $1 - \alpha_H$ is also c . In sum, the

source of the goal ambiguity faced by the agency is embodied in whether the level of utility that the principal receives when $R = 1 \cap T = 0$ is α_H or α_L . Given whether the agency believes the true value is α_H or α_L , the degree of that ambiguity is determined by how confident the agency is in its belief as measured by how close c is to one.

Although the politician enjoys superior knowledge of her own preferences, in this analysis, the agency (or agencies) also holds an informational advantage. The source of this advantage originates in the agent's more detailed understanding of the policy space. As Jonathan Bendor and Adam Meirowitz explain, the reasoning supporting delegation under these circumstances traces back to at least Alexander Hamilton's Federalist No. 23 in which he "advanced a logic for transferring control from less informed to more informed officials, anticipating that the more knowledgeable ones would make better choices" (2004, p. 294). The authors continue, "His view has persisted to the present day and is particularly prominent in the study of bureaucracy" (Bendor & Meirowitz 2004, p. 294). In this study, the agency's superior knowledge manifests itself in the organization's ability to interpret how the social and industry environment surrounding the government function will impact the agency's effectiveness in achieving its assigned goal or goals. However, although the agency observes and interprets these environmental conditions, the politician does not. The agency's greater expertise and knowledge relative to its political principal thus derives from its ability to both discern environmental shifts—such as the move toward deep water development characteristic of the oil and gas industry beginning in the mid-1990s—and understand better how these changing conditions will likely affect government performance.

As described in the previous section, one of the important related features of this research is that it explicitly incorporates the notion that these changes in environmental conditions can affect

how easily the goals are accomplished in similar or divergent ways. Consider the example of an increase in worldwide oil prices as a change in the environment conditions associated with the offshore oil and gas industry. If this change spurs domestic industry efforts to explore and produce oil, it would simultaneously increase the amount of taxes due to the government for such production. If the agency charged with collecting taxes employs the same amount of resources as it did prior to the price increase, this same expenditure of resources will now be more productive. Audits of oil and gas producers and money spent to implement new accounting systems will yield more government revenue simply because more oil is being extracted from offshore oil wells. Holding the goal constant, the likelihood that it will be achieved is increased.

Yet, the opposite is true of the agency tagged to prevent a large oil spill. With greater production comes greater opportunity for failure. If the agency employs the same amount of resources to conduct inspections of drilling rigs and production platforms, the productivity of these inspections as measured by the likelihood of a major spill is likely to fall. To the extent that the specific shifts in efforts to collect taxes and prevent spills in this example reflects the general pattern in their relationship for a broader set of environmental shocks, the correlation between them will be negative. Alternatively, if the general pattern does not reflect this particular case, the correlation between how environmental factors impact the productivity of tax collection and safety efforts may be closer to zero or even positive.

To model both the informational asymmetry embodied in the agency's advantage in discerning the effects of environmental signals as well as the interaction in how these signals affect the two functions, I represent the impact of the exogenous conditions on the agency's ability to achieve R and T by two Bernoulli random variables, φ and τ , where:

$\varphi = \{0,1\}$ with $P(\varphi = 1) = p$ and

$\tau = \{0,1\}$ with $P(\tau = 1) = q$

The first random variable φ measures the effect of a particular set of social and industrial conditions on the agency's efforts to avoid an oil spill. Similarly, the random variable τ characterizes the impact of these same circumstances on the likelihood that agency efforts to collect \$X billion in taxes, T , will be successful. One can think of φ and τ as random variables representing specific realizations of all possible environmental conditions, incorporating the effect that each set of conditions has on the effectiveness to achieve that particular goal. In the example of the worldwide oil price increase described earlier, τ would equal one and φ would equal zero, reflecting the fact that the shift makes efforts to collect taxes easier while simultaneously making efforts to prevent an oil spill much harder. In this context, p and q represent the probabilities—given all realizations of environmental conditions—that any particular realization will be advantageous to the agency's achievement of φ and τ respectively. In the specific context of the offshore oil and gas industry, there is no particular reason to think that these probabilities should differ—that over all realizations of environmental conditions, an agency will have an easier time collecting taxes relative to preventing a spill. For this reason, to simplify the discussion and focus more attention on the interaction between the random variables, I assume $p = q = 1/2$ in what follows. Still, the analysis is unaffected by changes to this assumption.

To model the relationship between the effects of environmental shocks on agency goal achievement, I assume that the covariance between φ and τ , represented as $Cov(\varphi, \tau)$, can be positive, zero, or negative. Applying the definition of correlation, I note that:

$$Cov(\varphi, \tau) = Corr(\varphi, \tau)\sqrt{Var(\varphi)Var(\tau)} \text{ where } -1 \leq Corr(\varphi, \tau) \leq 1$$

Further, because both random variables are Bernoulli, and given that $p = q = 1/2$, the variances of φ and τ can be written as:

$$Var(\varphi) = p(1 - p) = 1/4 \text{ and}$$

$$Var(\tau) = q(1 - q) = 1/4$$

Using these results, one can characterize the set of joint probabilities for the possible realizations of τ and φ . The probabilities, which are derived in Proof 1 in Appendix B, show how the correlation between the random variables impacts the probability that a particular environmental shock will affect the ability to achieve the functions in similar ways. They are given as:

$$P(\varphi = 1, \tau = 1) = P(\varphi = 0, \tau = 0) = \frac{Corr(\varphi, \tau) + 1}{4}$$

$$P(\varphi = 1, \tau = 0) = P(\varphi = 0, \tau = 1) = \frac{1 - Corr(\varphi, \tau)}{4}$$

In the extreme, when $Corr(\varphi, \tau) = 1$, $P(\varphi = 1, \tau = 1)$ and $P(\varphi = 0, \tau = 0)$ will both equal $1/2$, signifying that for all possible states of the world, environmental conditions will impact the ability of the agency or agencies to achieve their goals in the same way. On the other hand, when $Corr(\varphi, \tau) = -1$, $P(\varphi = 1, \tau = 0)$ and $P(\varphi = 0, \tau = 1)$ will each equal $1/2$ so that exogenous shifts will always affect efforts to achieve R and T in opposite ways. Finally, when $Corr(\varphi, \tau) = 0$, each combination has a probability of $1/4$ so that knowing how a particular shock affects tax collection in no way helps to predict how that same shock will affect oil spill prevention. Thus, if the opposing effects that increases in oil prices have on probable success on the functions is consistent with the general set of other possible environmental shifts, $Corr(\varphi, \tau)$ will be negative, signifying that when $\varphi = 1$, it is likely that $\tau = 0$ and that when $\varphi = 0$, it is

likely that $\tau = 1$. Of course, the opposite is true if shocks tend to affect goal performance in similar ways.

In addition to using the random variables to model the relationship between the two goals, I incorporate agency expertise into the model through these same exogenous shocks. While I make the assumption that the true values of $Corr(\varphi, \tau)$, p , and q are common knowledge, specific realizations of τ and φ are not. In particular, the agency assigned to a function knows the value of its respective random variable before choosing its action. However, the politician does not observe τ or φ , herein introducing the aforementioned informational asymmetry between the agent and principal. Yet, importantly, the agency's ability to discern τ and φ is contingent upon whether it is assigned both functions. If the politician assigns tax collection to one agency and regulation to another, the former will observe τ , and the latter will observe φ . On the other hand, when R and T are both assigned to one agency, the multiple-purpose regulator observes the realizations of both random variables, τ and φ .

Beyond observing environmental conditions, agencies in this model also take action in attempting to achieve R and T for the principal. Specifically, the amount of resources deployed by the agency to increase the probability that a large oil spill is averted is expressed as r . Similarly, t represents the budgetary resources used to increase the probability that the tax collection goal is achieved. In the case where the politician assigns the functions to two separate agencies, she also decides on the allocations of r and t , denoted r_p and t_p respectively. When the politician instead chooses to allocate both functions to a single agency, the agency then decides on the amount of resources to assign to the regulatory and tax collection functions. The resulting agency allocation to regulation is labeled r_a , and its allocation to tax collection is labeled t_a .

While, in reality, some limits may exist on the agency's ability to shift resources between functions, casual observation does support the notion that agencies do retain substantial leeway in moving resources between purposes (Ting 2002). Moreover, the experience of MMS provides further confirmation. Although its Offshore Energy group retained individual line items in its budget justifications for its Regulatory, Leasing and Environmental, and Resource Evaluation programs, the extensive overlap that in practice characterized activities associated with offshore oil and gas management suggests that these figures were far from hard and fast (Department of the Interior 2010, p. 6). For example, given that the Resource Evaluation program supported "all phases of OCS program activities" (Minerals Management Service 2004, p. 108), it is not difficult to envision that actual spending on that program in any given year could easily differ substantially from what was specifically appropriated for it.

I assume that the total budget (B) available to the principal to mete out resources to the functions is given and equal to one. Thus, $B = 1 \geq r_i + t_i$ where $i = \{a, p\}$. Certainly, bounds exist on the extent to which Congress can adjust budgets. Furthermore, it is not uncommon to observe models that rely on assumptions in this same spirit. For example, many of the canonical models in political economy assume balanced budgets where the government cannot spend more than it takes in and that total income in the economy—which determines the budget—is exogenously set at a predetermined level (see, e.g., Iversen & Soskice 2001, Meltzer & Richard 1981, Milesi-Ferretti et al. 2002, Moene & Wallerstein 2001). Here one could think of the budget as being determined by anticipated tax receipts which equal one. Nonetheless, since it represents a clear oversimplification—particularly given the literature that suggests that budget shifts can be used to send powerful signals to agencies in addition to possibly directly affecting agency activity levels (Carpenter 1996, Wood & Waterman 1993)—relaxing this assumption

might yield useful insights. However, because this assumption enables me to focus on the politician's relative allocation of the budget as opposed to its size, this extension is left for future work.

Combining the agency's ability to interpret exogenous signals as well as its role in implementing the budget, I represent the probability of successfully preventing a large oil spill as $P(R = 1) = r\varphi$. As previously described, r is the portion of the budget used to achieve R , and φ is a random variable which measures how the current environmental reality impacts the ability of the agency to successfully prevent a spill. Similarly, the probability of collecting \$X billion in taxes is modeled as $P(T = 1) = t\tau$, where t is the portion of the budget used to achieve T , and τ is the second random variable that characterizes how the same exogenous factors affecting achievement of R simultaneously impact the productivity of efforts to achieve T . In other words, as measured by τ , environmental conditions affect the ability of the agency to collect taxes by buoying or mitigating the effectiveness of resources utilized to accomplish the goal. Thus, τ plays the same role that φ does with regard to the agency's efforts to prevent a large oil spill.

Using the probabilities of success on each goal and the impacts of environmental conditions computed earlier, as a final step, I generate the probability distribution of success and failure on the principal's two goals. These probabilities, derived in Proof 2 and shown below in Figure 6-2, show how the agency's actions and the exogenous environment interact to increase or decrease the probability of achieving the principal's goals. As the figure shows, even when $Corr(\varphi, \tau) = 1$ such that the probability of joint success on the goals is at its highest, whether both can be achieved turns on agency implementation choices. If, for example, either the multiple-purpose regulator or one of the single purpose agencies decides not to use its budget on one of the tasks, both R and T cannot be achieved simultaneously.

Figure 6-2 – The Joint Probability Distribution of Goal Success and Failure Computed from the Principal’s Perspective

		Collect \$X Billion in Taxes (T)			
		1	0		
Prevent Large Oil Spill (R)	1	$r_i t_i \left(\frac{Corr(\varphi, \tau) + 1}{4} \right)$	$\frac{r_i}{2} - r_i t_i \left(\frac{Corr(\varphi, \tau) + 1}{4} \right)$	$\frac{r_i}{2}$	
	0	$\frac{t_i}{2} - r_i t_i \left(\frac{Corr(\varphi, \tau) + 1}{4} \right)$	$1 - \frac{t_i}{2} - \frac{r_i}{2} + r_i t_i \left(\frac{Corr(\varphi, \tau) + 1}{4} \right)$	$1 - \frac{r_i}{2}$	
		$\frac{t_i}{2}$	$1 - \frac{t_i}{2}$		

Notes: The value in each box represents the probability of that combination of success (1) or failure (0) on R and success (1) or failure (0) on T from the politician’s viewpoint. The variables r_i and t_i represent the portion of the budget used to achieve success on R and T respectively where $i = \{a, p\}$ signify that the allocation can be determined by the agency assigned to that task (a) or the principal (p) if the agent implements the principal’s allocation. $Corr(\varphi, \tau)$ represents the correlation with respect to how environmental shocks affect the possibility of achieving each of the goals. The variable φ is associated with R, and τ is associated with T. The probabilities are derived in Proof 2.

Linking Figures 6-1 and 6-2 and assuming that the principal is risk neutral, one can characterize the political principal’s ex-ante problem as:

$$\max_{r_i, t_i} P(R = 1, T = 1)(1 + \delta) + P(R = 1, T = 0) \alpha + P(R = 0, T = 1)(1 - \alpha)$$

$$s. t. r_i + t_i \leq 1 \text{ where } i = \{a, p\}$$

Substituting for the joint probabilities in Figure 6-2, it becomes straightforward to show that the constraint binds which I do in Proof 3. Therefore, the politician’s problem can be rewritten as:

$$\max_{r_i, t_i} r_i t_i \rho (1 + \delta) + \left(\frac{r_i}{2} - r_i t_i \rho \right) \alpha + \left(\frac{t_i}{2} - r_i t_i \rho \right) (1 - \alpha)$$

$$s. t. r_i + t_i = 1 \text{ where } i = \{a, p\} \text{ and}$$

$$\rho = \frac{Corr(\varphi, \tau) + 1}{4}$$

Even so, as I will show, it is not how the principal solves her problem directly which determines how the budget is allocated, but rather how the agencies solve the principal’s problem that determines whether she chooses to join or separate the goals.

The game proceeds in several stages. Initially, the political principal acquires the allotted budget, B , which is equal to one. Second, the principal decides whether to consolidate the goals, R and T , in one agency—a multiple-purpose regulator—or separate the goals by assigning R to one agency and T to another. This decision creates two subgames. Third, if the principal chooses to consolidate the goals, she presents the full budget to a multiple-purpose regulator. Alternatively, if the principal decides to allocate the goals to two agencies, she then chooses the portion of the budget, r_p , to assign to goal R and the portion, t_p , to assign to goal T where $r_p + t_p = 1$ by Proof 3. Fourth, the effects of the environmental conditions φ and τ are revealed to the appropriate agencies. If the goals are consolidated, the multiple-purpose regulator observes φ and τ . If the goals are separated, the agency assigned R observes φ , and the agency assigned T observes τ . Fifth, the multiple-purpose regulator, if chosen by the principal, chooses the amount to allocate to R , r_a , and the amount to allocate to T , t_a , where $r_a + t_a \leq 1$. When the principal instead assigns R and T separately, the agency allotted r_p chooses r_a such that $r_a \leq r_p$. The agency allotted t_p chooses t_a such that $t_a \leq t_p$. Sixth, success or failure on both goals is revealed where $P(R = 1) = r_a\varphi$ and $P(T = 1) = t_a\tau$. Seventh, the principal's utility is realized.

Computing Expected Utility in Combining Functions

In order to determine the factors that drive the politician to consolidate or separate the goals, I compute the expected utility for each of the two subgames separately and then compare them. In this section, I focus on the subgame which begins with the politician's decision to allocate both tasks to one agency, referred to as agency RT . This game begins with the politician allocating $B = 1$ to the agency. The multiple-purpose regulator observes both τ and φ and then

using the realizations of these random variables, its knowledge of δ , and its belief about α , allocates B to maximize the politician's utility.

Because agency RT observes the realizations of τ and φ prior to allocating resources to each of the functions, the joint probability distribution over success and failure on the two goals differs from Figure 6-2 which shows the probabilities assigned by the principal who does not observe τ and φ . In other words, the probabilities assigned by agency RT to each combination reflect the updated probabilities after nature has revealed τ and φ . Unlike the probabilities facing the principal, after τ and φ are revealed, the probability of achieving R is independent of the probability of achieving T . As a result, one can apply the basic rules of probability to compute the probabilities associated with the combinations as:

$$P(R = 1, T = 1) = P(R = 1)P(T = 1) = (r_a \varphi)(t_a \tau)$$

$$P(R = 1, T = 0) = P(R = 1) - P(R = 1, T = 1) = (r_a \varphi)(1 - t_a \tau)$$

$$P(R = 0, T = 1) = P(T = 1) - P(R = 1, T = 1) = (t_a \tau)(1 - r_a \varphi)$$

Although easily computed, I do not show $P(R = 0, T = 0)$ since, as reflected in Figure 6-1, the principal derives zero utility from this outcome.

Because the agency attempts to maximize the principal's utility, the agency's problem mirrors the principal's problem and can be written as:

$$\begin{aligned} \max_{r_a, t_a} & P(R = 1, T = 1)(1 + \delta) + P(R = 1, T = 0)(c\alpha_i + (1 - c)(1 - \alpha_i)) \\ & + P(R = 0, T = 1)(c(1 - \alpha_i) + (1 - c)\alpha_i) \\ \text{s.t. } & r_a + t_a \leq 1 \end{aligned}$$

where, for example, $c\alpha_i + (1 - c)(1 - \alpha_i)$ replaces α to reflect the multiple-purpose regulator's uncertainty regarding the true value of α . The expression is a weighted sum of the possible

values for α , based on the agency's belief about which is the true α . Substituting for the probabilities, the expression becomes:

$$\begin{aligned} \max_{r_a, t_a} & (r_a \varphi)(t_a \tau)(1 + \delta) + (r_a \varphi)(1 - t_a \tau) (c\alpha_i + (1 - c)(1 - \alpha_i)) \\ & + (t_a \tau)(1 - r_a \varphi)(c(1 - \alpha_i) + (1 - c)\alpha_i) \\ \text{s.t. } & r_a + t_a \leq 1 \end{aligned}$$

Since the politician's expected utility in assigning both tasks to one agency derives from understanding how the multiple-purpose regulator will act under the four possible combinations of τ and φ , I now analyze the combinations one at a time. When the multiple-purpose regulator observes $\varphi = 0$ and $\tau = 1$, the problem simplifies to:

$$\begin{aligned} \max_{r_a, t_a} & t_a(c(1 - \alpha_i) + (1 - c)\alpha_i) \\ \text{s.t. } & r_a + t_a \leq 1 \end{aligned}$$

It is straightforward to show that the solution to this problem is $t_a^* = 1$. This is true because even when the agency is certain ($c = 1$) that $\alpha = \alpha_H$, α_H can, by definition, never equal 1.

Thus, $c(1 - \alpha_i) + (1 - c)\alpha_i$ always exceeds zero and adding more t_a increases the politician's utility. As a result, when the multiple-purpose regulator—in maximizing the principal's utility—observes that $\varphi = 0$ and $\tau = 1$, it sets $t_a^* = 1$. Since $t_a^* = 1$, $r_a^* = 0$, $\tau = 1$, and $\varphi = 0$:

$$P(R = 0, T = 1) = (t_a \tau)(1 - r_a \varphi) = 1$$

Given that the probability is one that $R = 0 \cap T = 1$ when the agency observes $\varphi = 0$ and $\tau = 1$, and Figure 6-1 indicates that the principal's payoff when $R = 0 \cap T = 1$ is $1 - \alpha$, the principal's expected utility when $\varphi = 0$ and $\tau = 1$ is:

$$EU_p(\varphi = 0, \tau = 1) = 1 - \alpha$$

In the case where $\varphi = 1$ and $\tau = 0$, the analysis is very similar. The agency's problem becomes:

$$\max_{r_a, t_a} r_a (c\alpha_i + (1-c)(1-\alpha_i))$$

$$s.t. r_a + t_a \leq 1$$

Again, $(c\alpha_i + (1-c)(1-\alpha_i))$ always exceeds zero because even when $P(\alpha = \alpha_L) = c$ and $c = 1, \alpha_L > 0$ by assumption. Therefore, similar to the previous case, the agency sets $r_a^* = 1$ to maximize the principal's utility. Since $P(R = 1, T = 0) = 1$, the principal's total expected utility is:

$$EU_p(\varphi = 1, \tau = 0) = \alpha$$

On the other hand, when $\varphi = 0$ and $\tau = 0$, the multiple-purpose regulator cannot achieve either goal and so $P(R = 0, T = 0) = 1$. In this situation, the principal's expected utility is:

$$EU_p(\varphi = 0, \tau = 0) = 0$$

Finally, if the multiple-purpose regulator observes that $\varphi = 1$ and $\tau = 1$, the constrained maximization problem simplifies to:

$$\max_{r_a, t_a} r_a t_a \delta + r_a (c\alpha_i + (1-c)(1-\alpha_i)) + t_a (c(1-\alpha_i) + (1-c)\alpha_i)$$

$$s.t. r_a + t_a = 1$$

The constraint binds as is shown as part of Proof 3. Substituting $1 - r_a$ for t_a , and setting

$\mu = c\alpha_i + (1-c)(1-\alpha_i)$, the problem is now:

$$\max_{r_a} (r_a - r_a^2) \delta + r_a \mu + (1 - r_a)(1 - \mu)$$

Taking the first order condition with respect to r_a and setting the expression equal to zero gives:

$$\frac{d}{dr_a} = (1 - 2r_a) \delta + 2\mu - 1 = 0$$

Therefore, the optimal levels of r_a^* and t_a^* are given as:

$$r_a^* = \frac{\delta + 2\mu - 1}{2\delta}$$

$$t_a^* = \frac{\delta - 2\mu + 1}{2\delta}$$

As is shown as part of Proof 5, these expressions yield the solution when $|2\mu - 1| \leq \delta$ because $0 \leq r_a^*, t_a^* \leq 1$ in that case. Ignoring the knife edge case where $|2\mu - 1| = \delta$, the condition suggests that the agency will allocate resources to both functions as long as the principal's payoff to joint success is sufficiently large relative to the organization's belief about the size of the larger of the payoffs in the case where only one goal is achieved. In Proof 5, I demonstrate that this condition is never more restrictive than a similar condition for an interior solution when the functions are separated. Moreover, I demonstrate in that same analysis that the stricter condition retains the same core features that the examination in the text reveals. As a result, since I derive the chapter's propositions based on the latter stricter condition, I can safely focus my attention here on the case where the multiple-purpose regulator allocates a portion of the budget to each function.

Given this, each possible combination of R and T yields a positive probability, and so the principal's expected utility when $\varphi = 1$ and $\tau = 1$ becomes:

$$EU_p(\varphi = 1, \tau = 1) = P(R = 1, T = 1)(1 + \delta) + P(R = 1, T = 0)\alpha + P(R = 0, T = 1)(1 - \alpha)$$

To calculate $EU_p(\varphi = 1, \tau = 1)$, I first compute each of the probabilities given r_a^* and t_a^* as:

$$P(R = 1, T = 1) = (r_a\varphi)(t_a\tau) = \left(\frac{\delta + 2\mu - 1}{2\delta}\right)\left(\frac{\delta - 2\mu + 1}{2\delta}\right)$$

$$P(R = 1, T = 0) = (r_a\varphi)(1 - t_a\tau) = \left(\frac{\delta + 2\mu - 1}{2\delta}\right)\left(1 - \frac{\delta - 2\mu + 1}{2\delta}\right) = \left(\frac{\delta + 2\mu - 1}{2\delta}\right)^2$$

$$P(R = 0, T = 1) = (t_a\tau)(1 - r_a\varphi) = \left(\frac{\delta - 2\mu + 1}{2\delta}\right)\left(1 - \frac{\delta + 2\mu - 1}{2\delta}\right) = \left(\frac{\delta - 2\mu + 1}{2\delta}\right)^2$$

Substituting these probabilities, the expected utility to the principal when $\varphi = 1$ and $\tau = 1$ is:

$$EU_p(\varphi = 1, \tau = 1) = \left(\frac{\delta + 2\mu - 1}{2\delta}\right) \left(\frac{\delta - 2\mu + 1}{2\delta}\right) (1 + \delta) + \left(\frac{\delta + 2\mu - 1}{2\delta}\right)^2 \alpha + \left(\frac{\delta - 2\mu + 1}{2\delta}\right)^2 (1 - \alpha)$$

This expression simplifies to:

$$EU_p(\varphi = 1, \tau = 1) = \frac{\delta(2 + \delta) + (4\alpha - 2\mu - 1)(2\mu - 1)}{4\delta}$$

Having already derived the politician's expected utility when $\varphi = 1$ and $\tau = 0$ as well as when $\varphi = 0$ and $\tau = 1$, I now compute an expression which represents the politician's expected utility when she decides to assign both tasks to a single agency, RT . First, I can write $EU_p(RT)$ as:

$$EU_p(RT) = P(\varphi = 1, \tau = 1)EU_p(\varphi = 1, \tau = 1) + P(\varphi = 1, \tau = 0)EU_p(\varphi = 1, \tau = 0) \\ + P(\varphi = 0, \tau = 1)EU_p(\varphi = 0, \tau = 1)$$

Substituting for the politician's ex-ante probabilities which were calculated earlier as well as for her expected utilities associated with each combination of φ and τ , the expression becomes:

$$EU_p(RT) = \left(\frac{Corr(\varphi, \tau) + 1}{4}\right) \left(\frac{\delta(2 + \delta) + (4\alpha - 2\mu - 1)(2\mu - 1)}{4\delta}\right) + \left(\frac{1 - Corr(\varphi, \tau)}{4}\right) \alpha \\ + \left(\frac{1 - Corr(\varphi, \tau)}{4}\right) (1 - \alpha)$$

Simplifying, the politician's expected utility from combining functions can be rewritten as:

$$EU_p(RT) = \frac{(1 + Corr(\varphi, \tau))(\delta^2 + (4\alpha - 2\mu - 1)(2\mu - 1)) + (3 - Corr(\varphi, \tau))2\delta}{16\delta}$$

Computing Expected Utility in Separating Functions

Having generated an expression for the politician's expected utility when she assigns both goals to one agency, I now turn to the task of computing a similar expression when the politician alternatively decides to separate the goals. Unlike in the case where the functions are combined,

in this subgame, the politician must decide how to allocate the budget in assigning the tasks. Observing the realization of the random variable associated with its particular assignment—either τ or φ —each agency then decides how much of the budget it is assigned to apply to generate utility for the principal. Because each agency is given a single goal, a role for priority goal ambiguity is removed and so each agency's actions are unaffected by uncertainty over the true value of α . However, although goal ambiguity is not an issue, as we will see, separating the functions simultaneously inhibits adjustments to the allocations based on the realization of the environmental conditions. As a result, separating functions introduces the possibility of the coordination problems so evident in the federal government's management of oil and gas functions prior to MMS's creation as demonstrated in Part II of this study.

Although the political principal decides on the amount of the budget to assign to each function, in order to do so optimally, the principal must predict how each agency will react once it is given its assignment and allocation. Thus, I begin the process of computing the equilibrium of this subgame by focusing on the individual agencies. The agency tasked with the goal of preventing an oil spill, which I refer to as agency R , receives r_p , and the agency selected to collect tax, agency T , receives t_p . Since the budget cannot exceed one, and I show in Proof 3 that the constraint binds, $r_p + t_p = 1$. However, I make no stipulations over how the agencies decide to implement their allocations. Even so, as I will show, each agency uses its entire allotment regardless of what it receives.

Starting with agency R , assume first that the agency observes that $\varphi = 1$. Because it is only assigned R , agency R does not observe the value of τ . Thus, it can only update its belief regarding the value of τ based on its observation of φ , which agency R does using Bayes' rule. Because it seeks to maximize the principal's utility, agency R takes the action which does so

given its expectation of τ and what agency T is likely to do. When $\varphi = 1$, the expression for the principal's expected utility becomes:

$$EU_p(\varphi = 1) = P(\tau = 1|\varphi = 1)EU_p(\tau = 1, \varphi = 1) + P(\tau = 0|\varphi = 1)EU_p(\tau = 0, \varphi = 1)$$

Taking each element in turn, $EU_p(\tau = 1, \varphi = 1)$ can be written as:

$$EU_p(\tau = 1, \varphi = 1) = P(R = 1, T = 1)(1 + \delta) + P(R = 1, T = 0)\alpha + P(R = 0, T = 1)(1 - \alpha)$$

The values of the probabilities in this scenario are:

$$P(R = 1, T = 1) = (r_p \varphi)(t_p \tau) = r_p t_p$$

$$P(R = 1, T = 0) = (r_p \varphi)(1 - t_p \tau) = r_p - r_p t_p$$

$$P(R = 0, T = 1) = (t_p \tau)(1 - r_p \varphi) = t_p - r_p t_p$$

The subscript p indicates that the politician sets the initial allocations. However, this does not preclude either agency from choosing to implement less than its allotment. In other words, either agency's actual resource implementation (r_a or t_a) can be less than what it is given by the principal. Substituting the probabilities into the expression for expected utility when $\varphi = 1$ and $\tau = 1$ generates:

$$EU_p(\tau = 1, \varphi = 1) = r_p t_p(1 + \delta) + (r_p - r_p t_p)\alpha + (t_p - r_p t_p)(1 - \alpha)$$

Following a similar procedure, $EU_p(\tau = 0, \varphi = 1)$ can be written as:

$$EU_p(\tau = 0, \varphi = 1) = P(R = 1, T = 1)(1 + \delta) + P(R = 1, T = 0)\alpha + P(R = 0, T = 1)(1 - \alpha)$$

Substituting into the expressions for the probabilities as before, one finds that when $\tau = 0$:

$$P(R = 1, T = 1) = 0$$

$$P(R = 1, T = 0) = r_p$$

$$P(R = 0, T = 1) = 0$$

The principal's expected utility when $\varphi = 1$ and $\tau = 0$ simplifies to:

$$EU_p(\tau = 0, \varphi = 1) = r_p \alpha$$

To find the conditional probabilities, $P(\tau = 1|\varphi = 1)$ and $P(\tau = 0|\varphi = 1)$, associated with the expression for $EU_p(\varphi = 1)$, the agency uses Bayes' rule as follows:

$$P(\tau = 1|\varphi = 1) = \frac{P(\tau = 1, \varphi = 1)}{P(\varphi = 1)} = \frac{\frac{Corr(\varphi, \tau) + 1}{4}}{\frac{1}{2}} = \frac{Corr(\varphi, \tau) + 1}{2}$$

$$P(\tau = 0|\varphi = 1) = \frac{P(\tau = 0, \varphi = 1)}{P(\varphi = 1)} = \frac{\frac{1 - Corr(\varphi, \tau)}{4}}{\frac{1}{2}} = \frac{1 - Corr(\varphi, \tau)}{2}$$

where $P(\varphi = 1) = p = 1/2$.

Combining the conditional probabilities and the joint expected utilities, the principal's expected utility if agency R learns that $\varphi = 1$ is:

$$EU_p(\varphi = 1) = \left(\frac{Corr(\varphi, \tau) + 1}{2} \right) (r_p t_p (1 + \delta) + (r_p - r_p t_p) \alpha + (t_p - r_p t_p) (1 - \alpha)) \\ + \left(\frac{1 - Corr(\varphi, \tau)}{2} \right) r_p \alpha$$

Thus, when $\varphi = 1$, agency R 's problem becomes:

$$\max_{r_a} \left(\frac{Corr(\varphi, \tau) + 1}{2} \right) (r_a (t_p \delta + \alpha) + t_p (1 - \alpha)) + \left(\frac{1 - Corr(\varphi, \tau)}{2} \right) r_a \alpha$$

$$s.t. \ r_a \leq r_p$$

where, from agency R 's perspective, t_p is exogenous. Furthermore, α is not replaced by

$\mu = c\alpha_i + (1 - c)(1 - \alpha_i)$ because as I show in Proof 4, the agency can learn α by the size of

the allocation that the principal assigns to achieve R when $0 < r_p < 1$. Furthermore, when

$r_p = 1$, it can learn the lower bound for α . Even so, this in no way affects the solution as the

agency does not rely on learning α to determine its action. Taking the first order condition, we

have:

$$\frac{d}{dr_a} = \left(\frac{\text{Corr}(\varphi, \tau) + 1}{2} \right) (t_p \delta + \alpha) + \left(\frac{1 - \text{Corr}(\varphi, \tau)}{2} \right) \alpha = \left(\frac{\text{Corr}(\varphi, \tau) + 1}{2} \right) t_p \delta + \alpha$$

Since $\alpha > 0$, the first order condition with respect to r_a is always positive which implies that the principal's utility is always increasing in r_a . Because the agency seeks to maximize the principal's utility, the constraint binds, and $r_a = r_p$. Moreover, agency R 's choice to set $r_a = r_p$ when $\varphi = 1$ is independent of agency T 's choice, t_a .

Having shown that the agency implements the principal's allocation when $\varphi = 1$, I next analyze the other possibility, that agency R observes $\varphi = 0$. It turns out that the agency's choice of r_a has no effect on the principal's utility in this scenario. Thus, the agency will be indifferent to the level of its resources that it applies. However, because agency T faces the same problem that agency R faces, one can show—in the same way as I have for agency R —that agency T 's choice of t_a is independent of agency R 's choice. Agency R 's decision when $\varphi = 0$ will not have an effect on agency T 's decision to select $t_a = t_p$ when it observes $\tau = 1$ regardless of what its beliefs are regarding φ .

To show that when $\varphi = 0$, r_a does not affect utility, I observe that the expected utility to the principal becomes:

$$EU_p(\varphi = 0) = P(\tau = 1|\varphi = 0)EU_p(\tau = 1, \varphi = 0) + P(\tau = 0|\varphi = 0)EU_p(\tau = 0, \varphi = 0)$$

Because the politician's utility when $\varphi = 0$ and $\tau = 0$ is 0, the second term can be eliminated from the expression. Focusing on the first term, the politician's expected utility when $\varphi = 0$ and $\tau = 1$ is:

$$EU_p(\tau = 1, \varphi = 0) = P(R = 1, T = 1)(1 + \delta) + P(R = 1, T = 0)\alpha + P(R = 0, T = 1)(1 - \alpha)$$

However, because $\varphi = 0$, the associated probabilities simplify to:

$$P(R = 1, T = 1) = (r_a \varphi)(t_p \tau) = 0$$

$$P(R = 1, T = 0) = (r_a \varphi)(1 - t_p \tau) = 0$$

$$P(R = 0, T = 1) = (t_p \tau)(1 - r_a \varphi) = t_p$$

and the principal's expected utility can be written as:

$$EU_p(\tau = 1, \varphi = 0) = t_p(1 - \alpha)$$

Computing the conditional probability that $\tau = 1$ when $\varphi = 0$ as:

$$P(\tau = 1 | \varphi = 0) = \frac{P(\tau = 1, \varphi = 0)}{P(\varphi = 0)} = \frac{\frac{1 - Corr(\varphi, \tau)}{4}}{\frac{1}{2}} = \frac{1 - Corr(\varphi, \tau)}{2}$$

agency R 's problem can now be written as:

$$\max_{r_a} \left(\frac{1 - Corr(\varphi, \tau)}{2} \right) t_p(1 - \alpha)$$

$$s.t. \ r_a \leq r_p$$

Since r_a does not enter the maximand, agency R 's choice of r_a does not affect the principal's utility when $\varphi = 0$.

The analysis for agency T 's choice of t_a mirrors that for agency T and so to avoid repetition, it is not shown here. However, in exactly the same way that I have shown that agency R chooses $r_a = r_p$ when $\varphi = 1$ and that the agency is indifferent to its choice of r_a when it does not affect the principal's utility ($\varphi = 0$), agency T chooses $t_a = t_p$ when $\tau = 1$ and $t_a \leq t_p$ when $\tau = 0$.

Thus, I have shown that, given the realizations of φ and τ , each agency acts exactly as the politician would under the same circumstances, a result which follows from the assumption that the agencies seek to maximize their political principal's utility. Agency R chooses $r_a = r_p$ when its decision can affect the politician's utility. Similarly, agency T implements $t_a = t_p$ when its choice can impact its political principal's utility. As a result, the politician can simply solve for

its optimal budget allocation, knowing that its allocation will be implemented by each agency when that agency's action can affect the politician's payoff.

Given the knowledge that agency R and agency T will implement their allocations when their observations of their respective environmental conditions suggest it matters, the politician can now determine her optimal allocation of r_p and t_p . Recalling the principal's problem from above and substituting r_p for r_i and t_p for t_i , the problem becomes:

$$\max_{r_p, t_p} r_p t_p \rho (1 + \delta) + \left(\frac{r_p}{2} - r_p t_p \rho \right) \alpha + \left(\frac{t_p}{2} - r_p t_p \rho \right) (1 - \alpha)$$

$$s.t. r_p + t_p = 1 \text{ and}$$

$$\rho = \frac{Corr(\varphi, \tau) + 1}{4}$$

Substituting $t_p = 1 - r_p$ and taking the first order condition yields:

$$\frac{d}{dr_p} = (1 - 2r_p) \rho (1 + \delta) + \left(\frac{1}{2} - (1 - 2r_p) \rho \right) \alpha - \left(\frac{1}{2} + (1 - 2r_p) \rho \right) (1 - \alpha) = 0$$

Isolating r_p and simplifying, the principal's optimal budget allocation to preventing an oil spill becomes:

$$r_p^* = \frac{1}{2} + \frac{2\alpha - 1}{4\rho\delta} = \frac{1}{2} + \frac{2\alpha - 1}{\delta(Corr(\varphi, \tau) + 1)}$$

Similarly, the principal's optimal allocation to tax collection is:

$$t_p^* = \frac{1}{2} - \frac{2\alpha - 1}{4\rho\delta} = \frac{1}{2} - \frac{2\alpha - 1}{\delta(Corr(\varphi, \tau) + 1)}$$

As is shown as part of Proof 5, these expressions produce the solution when $0 \leq r_p^*, t_p^* \leq 1$ or when $|2(2\alpha - 1)| \leq \delta(Corr(\varphi, \tau) + 1)$. Similar to the case when the functions are combined, this condition suggests that the politician will choose to allocate some portion of the budget to both goals when her payoff to joint success is large enough relative to the larger of the

two payoffs in the case where only one of the goals is achieved. Moreover, because—unlike the multiple-purpose regulator—the politician does not observe the realizations of φ and τ prior to making the allocation, this condition also incorporates the idea that the probability that both goals can be achieved must also be sufficiently large to warrant allocating to both.

To simplify the discussion, in generating the propositions in the next section, I focus on the range where the above condition is met, and thus, the politician chooses an interior solution. However, similar to that analysis, in Proof 5, I derive an analogous expression which guides the principal's decision to combine or separate tasks when the above condition is not met. In doing so, I describe why the core results retain their essential features and, in many cases, are exactly replicated as well. Importantly, even where they are not identical, the results associated with the case where the politician allocates all resources to one agency provide further evidence which directly supports the intuition associated with the propositions described for the interior solution. Therefore, while simplifying the exposition, restricting attention to the range where $|2(2\alpha - 1)| \leq \delta(\text{Corr}(\varphi, \tau) + 1)$ is not limiting. Using this, we can substitute r_p^* and t_p^* back into the principal's maximand, and the expected utility to the principal from assigning the goals to two agencies—which I label $EU_p(R + T)$ —becomes:

$$EU_p(R + T) = r_p^* t_p^* \rho (1 + \delta) + \left(\frac{r_p^*}{2} - r_p^* t_p^* \rho \right) \alpha + \left(\frac{t_p^*}{2} - r_p^* t_p^* \rho \right) (1 - \alpha)$$

Replacing ρ and rearranging, the expression for the principal's expected utility simplifies to:

$$EU_p(R + T) = \frac{(\text{Corr}(\varphi, \tau) + 1)\delta + 4}{16} + \frac{(2\alpha - 1)^2}{4\delta(\text{Corr}(\varphi, \tau) + 1)}$$

The Conditions for Combining and Separating Goals

Having generated expressions for expected utility when the politician combines the two goals as well as when she separates them, I now compare the values to derive five propositions and one corollary. In order to do so, I approach the problem from the perspective of when it is optimal to combine the goals. Of course, one can just as easily instead analyze the conditions under which it is optimal to separate the goals which would yield exactly the same insights. The political principal will decide to assign both goals to one agency when her expected utility under these circumstances exceeds her expected utility if she instead assigns the goals to two agencies. This is given as:

$$EU_p(RT) \geq EU_p(R + T) \text{ or}$$

$$\frac{(1 + Corr(\varphi, \tau))(\delta^2 + (4\alpha - 2\mu - 1)(2\mu - 1)) + (3 - Corr(\varphi, \tau))2\delta}{16\delta}$$

$$\geq \frac{(Corr(\varphi, \tau) + 1)\delta + 4}{16} + \frac{(2\alpha - 1)^2}{4\delta(Corr(\varphi, \tau) + 1)}$$

where, as before, $\mu = c\alpha_i + (1 - c)(1 - \alpha_i)$ and $i = \{L, H\}$. Through algebraic manipulation, this inequality can be simplified and rewritten as is shown in Proposition 6-1 below.

Proposition 6-1. Given the condition described above for an interior solution, the political principal will choose to locate the regulatory and non-regulatory goals (R and T) in one agency when:

$$(1) \quad 2\delta(1 - Corr(\varphi, \tau)^2) + (Corr(\varphi, \tau) + 1)^2(4\alpha - 2\mu - 1)(2\mu - 1) > 4(2\alpha - 1)^2$$

Instead, when:

$$(2) \quad 4(2\alpha - 1)^2 > 2\delta(1 - Corr(\varphi, \tau)^2) + (Corr(\varphi, \tau) + 1)^2(4\alpha - 2\mu - 1)(2\mu - 1)$$

the politician will instead choose to separate the goals. Finally, when the two sides of the inequality are equal, the politician will be indifferent between combining and separating R and T .

Using Proposition 6-1—the derivation of which has been the focus to this point—I now examine the determinants of the politician’s decision to combine or separate purposes. Focusing initially on the first term of inequality (1), it immediately becomes clear that—when $-1 < Corr(\varphi, \tau) < 1$ —the larger is δ , the more likely it is that the inequality is satisfied. This, of course, is true because δ only appears in the first term of the inequality. As a result, when joint success on the goals is important to the principal, she is more likely to want to create a multiple-purpose regulator, a result formalized in Proposition 6-2.

Proposition 6-2. Except when the effect of environmental conditions on achievement of each of the goals is perfectly positively or negatively correlated ($Corr(\varphi, \tau) = 1$ or $Corr(\varphi, \tau) = -1$), the principal’s relative utility from combining the two functions instead of separating them will increase as the utility she derives from their joint success (δ) increases.

As explained above, this result follows quite simply since δ is only found in the first term in the inequality. For this reason, I do not set aside a separate proof for Proposition 6-2. Instead, I show it is true as part of the proof of Proposition 6-3 in Proof 6. However, despite being straightforward to demonstrate, the proposition has important implications for understanding agency design. First, as was also shown in Chapter 5, this result highlights the central importance of incorporating political preferences into an examination of agency design. Yet, Proposition 6-2 also shows that while a relative preference for one task or another can explain how conflicts within multiple-purpose regulators work themselves out, a joint desire to achieve both goals simultaneously can greatly impact the tradeoff. When the politician cares about achieving both goals, her expected payoff by merging them will increase as doing so improves the chances that joint success can be achieved. Thus, unlike the goal ambiguity literature which emphasizes the impediments to performance originating from the decision to assimilate

functions, Proposition 6-2 emphasizes that merging tasks does have its advantages. Furthermore, the result provides a rationale—without having to rely on the inefficiencies in the policy process—for why multiple-purpose regulators can be created in the first place.

The intuition for why politicians will prefer to merge goals when they more highly value success on both drives from the role that multiple-purpose regulatory agencies can play in making adjustments based on environmental conditions. Because the multiple-purpose regulator observes φ and τ before deciding on the optimal allocation of r_a and t_a , it can shift resources based on these realizations of the random variables. When $\varphi = 1$ and $\tau = 1$, an agency which combines purposes can allocate the budget such that the functions more equally share the resources to increase the probability that $R = 1$ and $T = 1$. The agency has this luxury relative to the politician because, if φ and τ reveal that joint success is possible, the probability that both goals are achieved increases. On the other hand, when the tasks are separated, not only do the agencies not observe both random variables, they simultaneously do not have the ability to coordinate resource allocations based on their observation of either φ or τ . Since the agency is only assigned one goal, reallocating its budget plays no role in its decision making. The result is that the politician—without witnessing the environmental shocks which affect performance—must guard for the very real possibility that achieving both will not happen. Given this, a politician's relative preference for one or the other goal, embodied in α , will play a more important role in setting the allocation.

In many ways, the intuition for Proposition 6-2 is closely related to Proposition 6-3 which offers a condition by which the multiple-purpose regulator's advantage in coordinating resources is likely to be most valuable. When the impacts of environmental and social shocks on the success of each of the goals is more highly correlated—either negatively or positively—the

politician can more easily predict how to allocate resources. Yet, the opposite is true when the exogenous conditions impact the goals in unpredictable ways. As a result, as described in Proposition 6-3, the agency's ability to make adjustments to optimize the allocations will be most valuable to simultaneously fulfilling both goals when the shocks are uncorrelated.

Proposition 6-3. The gain in relative utility from combining tasks at higher levels of δ as summarized in Proposition 6-2 is greater the closer that the correlation between the impacts of environmental shocks is to zero ($|Corr(\varphi, \tau)| \rightarrow 0$). As the correlation between φ and τ moves away from zero, the role that an agency that combines the tasks can have in increasing the relative utility of the politician when δ is larger diminishes.

While this result is proved in Proof 6, as suggested, its intuition follows from Proposition 6-2. If, for example, the impact of how exogenous conditions affect the probability of success on the two functions is highly negatively correlated, the politician knows—without observing the shocks themselves—that it is unlikely joint success will be a possibility. She will then make her allocation decision based on that reality. Similarly, when environmental and social changes affect both functions in the same way, the politician does not lose much from making the allocation decision herself since it is likely that the changes will affect success or failure on the two goals similarly.

For example, let us consider the case when $Corr(\varphi, \tau)$ moves close to one. Here, the principal's allocation prior to observing the random variables is unlikely to differ much from the multiple-purpose regulator's allocation. If $\varphi = 0$ and $\tau = 0$, the allocation decision is irrelevant because neither goal will be achieved. Yet, when $\varphi = 1$ and $\tau = 1$, the principal's allocation decision will closely approximate the multiple-purpose regulator's decision. Because the principal initiated her choice based on the high probability that if either Bernoulli random

variable realized a value of one, the other would simultaneously realize the same value, the agency's ex-post decision is unlikely to be much different from what the politician's ex-ante allocation would have been.

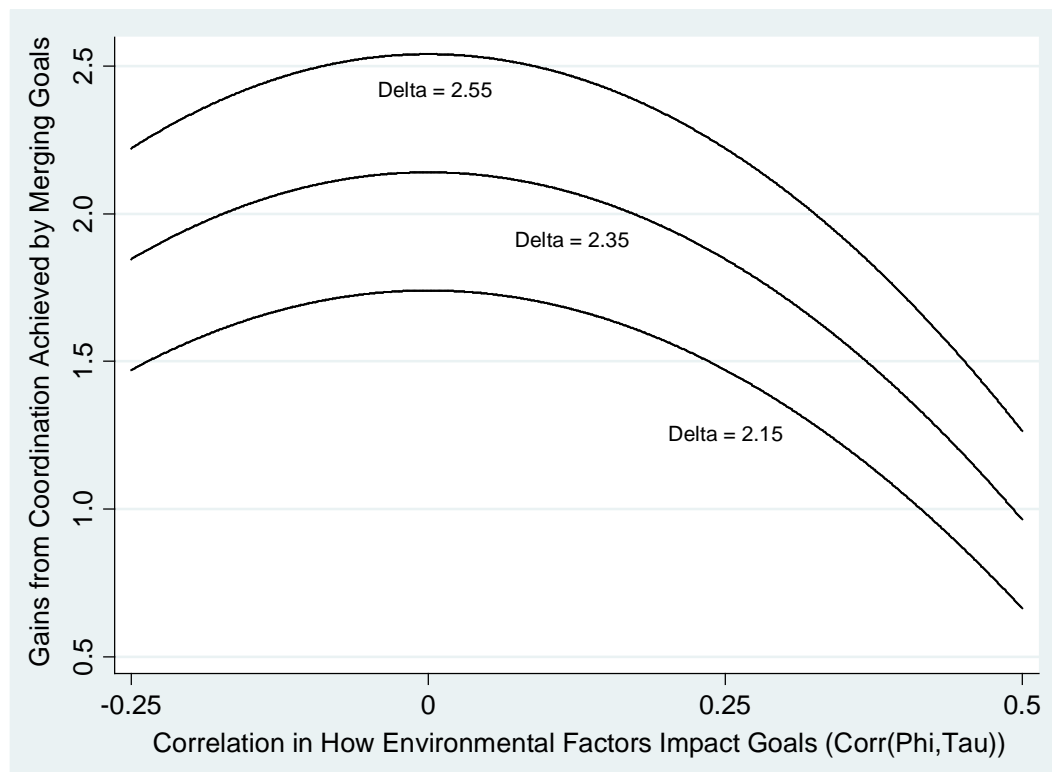
In contrast, when the correlation between how the conditions affect the probability of success on the two functions is close to zero, the politician has little information about how any change is likely to affect the goals. It is therefore in this case that the multiple-purpose regulator's superior information presents a real advantage. Because it only determines an allocation after observing the realizations of the random variables, unlike for the politician, uncorrelated shocks present no additional difficulty for the multiple-purpose regulator. In fact, the correlation between φ and τ does not directly affect the agency's decision at all except that it impacts the distribution of realizations that the multiple-purpose regulator faces.

The insights derived through Propositions 6-2 and 6-3 are further illustrated in Figure 6-3 below. The figure demonstrates how δ and $Corr(\varphi, \tau)$ interact to affect the gains the politician receives from combining purposes by focusing explicitly on the first and third terms from inequality (1) in Proposition 6-1. By removing the second term, the graph eliminates goal ambiguity and focuses attention on the advantage that the multiple-purpose regulator holds in its relative ability to coordinate its allocation to both tasks after observing the random variables. Each graph is generated by setting $\alpha = 0.9$, which is arbitrarily chosen and does not affect the relationships demonstrated.

Using the graphs, one can see how Propositions 6-2 and 6-3 relate to each other. Given that the politician derives greater relative utility from combining functions relative to separating them at higher levels of δ , the figure supports Proposition 6-2. This proposition states that holding all else constant, the politician derives a greater payoff from combining the functions when she

values achieving both functions simultaneously. However, the downward opening parabolas demonstrate that this decision is impacted by the underlying correlation in how environmental shocks affect each of the functions. As Proposition 6-3 reminds us, the value that multiple-purpose regulators bring in terms of their ability to coordinate the functions to increase the possibility that both goals are attained is most valuable when a shock impacts the goals in unrelated ways. This insight is supported in Figure 6-3 which shows that—for a given value of α —the politician is more likely to want to combine the functions for any δ as $Corr(\varphi, \tau)$ approaches zero.

Figure 6-3 – Isolating the Impact of Coordination on the Politician’s Relative Utility from Combining Purposes



Notes: The parabolas are computed by taking the difference between the first and third terms of inequality (1) from Proposition 1 or $2\delta(1 - Corr(\varphi, \tau)^2) - 4(2\alpha - 1)^2$ for various values of $Corr(\varphi, \tau)$ where $\alpha = 0.9$. The graphs, thus, isolate the relative gain in the politician’s utility from combining functions after removing goal ambiguity. $Corr(\varphi, \tau)$ represents the correlation with respect to how environmental shocks affect the possibility of achieving each of the goals. The variable φ is associated with R , and τ is associated with T .

Although Propositions 6-2 and 6-3 highlight the role that a multiple-purpose regulator can have in facilitating coordination between the functions, the inequalities derived in Proposition 6-1 simultaneously reveal the role that goal ambiguity can play in neutralizing the advantage derived from combining purposes. This effect is shown in the second term in inequality (1). Recalling that $\mu = c\alpha_i + (1 - c)(1 - \alpha_i)$, one can show—as I do in Proof 7—that $(Corr(\varphi, \tau) + 1)^2(4\alpha - 2\mu - 1)(2\mu - 1)$ increases with c as long as the agency's belief about α is correct. However, as the value of that term increases, so does the likelihood that inequality (1) will be satisfied. Of course, as Proposition 6-1 states, when inequality (1) is satisfied, in maximizing her utility, the politician will want to create a multiple-purpose regulator by combining the regulatory and non-regulatory goals. On the other hand, when the agency is incorrect in its belief about the value of α , greater uncertainty surrounding that belief increases the likelihood that inequality (1) will be satisfied and that creating a multiple-purpose regulator will best serve the politician's interest. These results are summarized in Proposition 6-4 below.

Proposition 6-4. Assume the multiple-purpose regulator is uncertain over α , and that $Corr(\varphi, \tau) > -1$. When the true value of α to the politician matches the agency's belief (i.e. $\alpha = \alpha_i = \alpha_H$ or $\alpha = \alpha_i = \alpha_L$), the politician derives relatively greater utility from combining the goals in one agency the greater is the agency's confidence regarding its belief as measured by c . In contrast, when the agency is incorrect in its belief surrounding the true value of α (i.e. $\alpha = \alpha_H \neq \alpha_i$ or $\alpha = \alpha_L \neq \alpha_i$), the politician's relative utility in combining the functions increases when the agency is less certain about its belief (as $c \rightarrow 1/2$).

As this proposition describes, agency goal ambiguity can be decomposed into two elements. The first, measured by c , underscores the role of uncertainty in diminishing agency performance. Much like the goal ambiguity literature described in Chapter 3, the uncertainty that ensues when

agencies are asked to balance various objectives can be detrimental to both individual employee and agency performance. Not only does increased complexity which follows from priority goal ambiguity potentially result in less efficient resource use, undesirable organizational behaviors, and lower intrinsic motivation (Lee et al. 1989, Locke & Latham 1990, Steers & Porter 1974), research has suggested that it can further lower morale by impeding management efforts to develop a unified organizational purpose (Morris 1985, Wilson 1989, Wright 2004).

In the model, these effects are illustrated through c which demonstrates how an agency's confidence in its beliefs surrounding its purpose can affect its performance. When uncertainty is high as demonstrated through a low value for c , ambiguity due to uncertainty is greater. As I have discussed, when an agency is given only one goal, uncertainty plays no role. Rather, agencies R and T simply implement their allocations when they can impact the politician's utility. The same is not true for the multiple-purpose regulator which uses its belief surrounding the politician's true α and its certainty regarding that belief as measured by c to allocate resources to both tasks. Thus, it is not surprising that the politician will be more likely to separate the goals into two agencies in response to high levels of agency uncertainty surrounding her preferences, for goal ambiguity impedes performance only for agencies which combine purposes.

In addition to offering a prediction about how goal ambiguity will affect agency design, the analysis also reveals the mechanism by which uncertainty impedes the multiple-purpose regulator's performance. When the agency is less confident regarding the politician's relative preference over the two functions, that agency will desire to hedge its allocation of resources to allow for the possibility that it is incorrect in its beliefs. Thus, as c declines, the agency will be more apt to equalize the allocation to each goal in an effort to guard against the situation where

the politician's preferences are actually different from what the agency perceives that they are. This inefficient allocation of resources based on the uncertainty surrounding the principal's preferences is what drives the diminished performance of multiple-purpose regulators in this model.

Yet, in addition to the operational inefficiency that results from goal ambiguity, Proposition 6-4 points out that ambiguity is also detrimental because the agency can be misinformed regarding the politician's preferences. Thus, not only does the principal lose because of the organizational inefficiency created by goal ambiguity, she can also lose in combining functions because the agency can simply be wrong about the principal's relative preferences. When this happens, Proposition 6-4 actually suggests uncertainty can work in the politician's favor for the very same reason that certainty increases her utility when the agency is correct in its beliefs. If the agency is less confident in its incorrect beliefs, much like the case where it is less confident when it is right, the agency will shade its allocation to account for this possibility. The more the allocation shifts in this case, the greater the expected utility to the principal. Without pushing the result too far, this finding actually presents a scenario where the politician may desire to encourage ambiguity. If she believes that there is a highly likelihood that the agency may choose the mix incorrectly, the politician may desire to foster uncertainty to encourage the multiple-purpose regulator to be less aggressive in pursuing its misinformed beliefs.

Of course, much like the advantage in coordination fostered by combining purposes, ambiguity's detrimental effect on multiple-purpose performance is also influenced by how environmental conditions impact the probability for success on the two goals. In Proposition 6-5 and Corollary 6-5.1, I examine these effects when the agency's fundamental belief regarding the relative preference of the politician over the two goals is correct, but it is not certain regarding

that belief. In doing so, I focus on the aspect of goal ambiguity that is most often considered in the literature—the effect of uncertainty on operational performance. Moreover, relative to the situation where the agency is simply wrong in its assessment of the politician’s preferences, as I discuss in the next section, the ambiguity surrounding the appropriate mix is likely the more relevant case. Even so, the structure of the proofs of Proposition 6-5 as well as Corollary 6-5.1—shown as Proofs 8 and 9—can certainly be extended to also consider the situation where the agency is wrong in its belief about the politician’s relative preference over achieving the two goals.

As Proposition 6-5 and Corollary 6-5.1 demonstrate, the effects of goal ambiguity which might otherwise encourage the principal to separate the goals into two agencies can change depending on how correlated the effects of the shocks are. The proposition shows that when the shocks affect both goals similarly, the politician is less likely to separate the functions for a given level of ambiguity. Furthermore, as the corollary reveals, efforts to reduce uncertainty by increasing c also have a greater effect when φ and τ are more positively correlated.

Proposition 6-5. Assume the agency’s belief regarding α matches the political principal’s preference over the goals ($\alpha = \alpha_i$) and that $c \neq 1/2$. If so, the larger is the uncertainty surrounding that belief (measured by a lower c) the greater is the relative utility that the politician receives in separating the tasks. However, holding uncertainty constant and assuming $Corr(\varphi, \tau) > -1$, the relatively greater utility that the politician receives from separating the tasks in the presence of ambiguity is reduced the more positively correlated are the impacts of environmental shocks on the probability of success on the two goals ($Corr(\varphi, \tau) \rightarrow 1$).

The intuition for why more uncertain beliefs detract from a multiple-purpose regulator’s performance as summarized in Proposition 6-4 is also instrumental to understanding how the

correlation between φ and τ impacts ambiguity as described in Proposition 6-5. As described, to the extent the multiple-purpose regulator has less confidence surrounding α as captured by a value for c that is closer to $1/2$, that agency will allocate its resources more evenly than it otherwise would to minimize the risk that it is wrong. In doing so, the agency begins to stray further from the allocation the politician would choose, who, of course, is certain about the true value of α . In an analogous way, when the underlying conditions impact both goals similarly, the preferred allocation of the principal begins to more closely track the uncertain agency's choice assuming that the agency is correct in its belief regarding α . When $Corr(\varphi, \tau)$ is high, the probability that both goals can be achieved simultaneously improves. As a result, the politician desires a more even allocation to exploit this possibility.

Although the agency's ambiguity also pushes it to allocate the resources more evenly, with higher correlations, the politician's allocation more closely resembles the agency's choice, reducing the spread between the two. As a result, for any given level of ambiguity, the more equal distribution of resources chosen by the multiple-purpose regulator is less damaging to the principal's utility. Thus, when success on both goals is highly correlated, the impact that ambiguity can have is smaller. At a fundamental level, assuming its underlying belief is correct, there is simply less damage that the agency's ambiguity can do when success on the two goals is highly correlated.

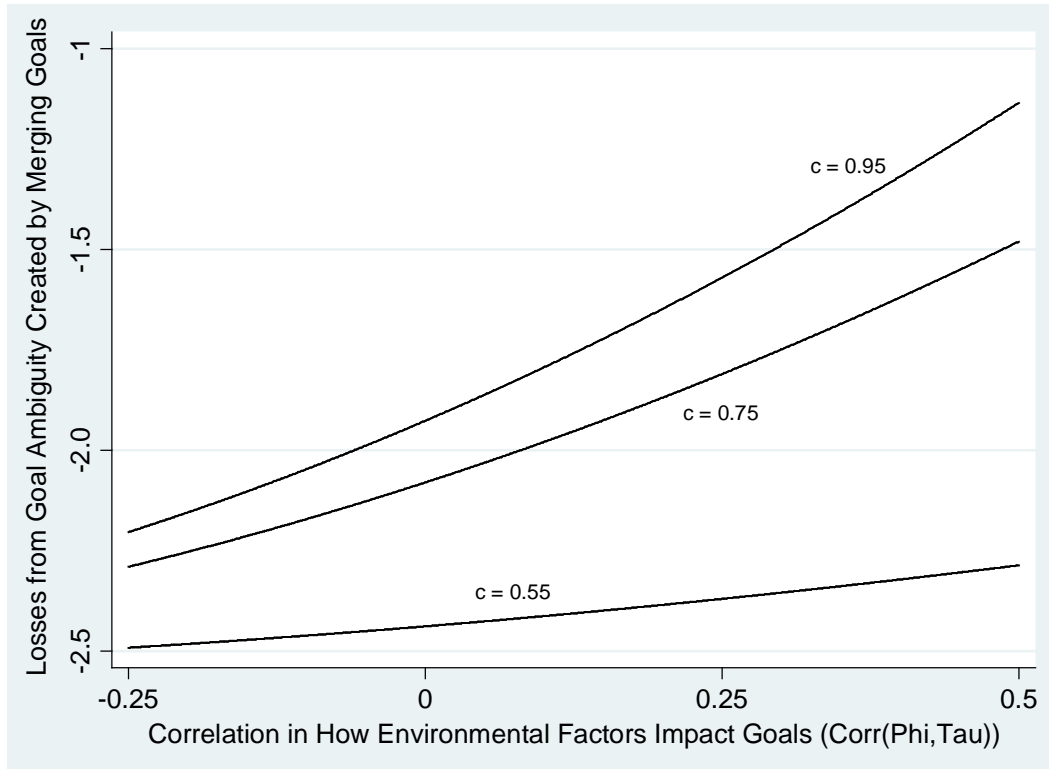
Corollary 6-5.1 extends Proposition 6-5 to the case where the uncertainty regarding the agency's beliefs is reduced. This might occur because of the politician's efforts to clarify her preferences through more carefully worded statutes, oversight hearings, and agency directives as well as the other mechanisms of control at the disposal of the president and Congress as described in Chapter 5. Yet, however it is accomplished, as the corollary details, these efforts

are likely to yield greater increases to the politician's utility when environmental conditions impact the likelihood of success on each goal in similar ways.

Corollary 6-5.1. Assume the multiple-purpose regulator is uncertain over α and that $\text{Corr}(\varphi, \tau) > -1$. If the agency's belief about α matches the political principal's relative preference for the goals ($\alpha = \alpha_i$), the more positively correlated are φ and τ , the greater the impact of efforts—by increasing c —to reduce agency uncertainty will have on the expected utility accrued to the politician in combining the functions relative to separating them.

While this result in some ways extends Proposition 6-5, the intuition for Corollary 6-5.1 derives from a slightly different feature of the problem. Instead of reducing the spread between the multiple-purpose regulator's allocation and the politician's preferred mix, the impact of increasing c is greater when $\text{Corr}(\varphi, \tau)$ is closer to one simply because a higher positive correlation amplifies the possibility that ambiguity can play a detrimental role. Specifically, it is only when the multiple-purpose regulator observes that $\varphi = 1$ and $\tau = 1$ that it considers the relative preference of the politician in setting the allocation. If the agency instead observes that $\varphi = 0$ and $\tau = 1$ or $\varphi = 1$ and $\tau = 0$, it focuses all of its resources on τ in the first case and φ in the second regardless of the extent to which it is uncertain over the politician's relative preference for R and T . On the other hand, when both variables reveal a value of one, the agency must allocate the resources between the two tasks considering the possibilities that both, only R , or only T will be achieved. In choosing how to allocate resources in this scenario, the agency's beliefs regarding the principal's preference over R and T become important. Since the possibility that $\varphi = 1$ and $\tau = 1$ simultaneously increases as the correlation between the random variables increases, efforts to improve clarity here by increasing c will have a greater impact due to the associated increase in situations where the value of c is relevant to the politician's utility.

Figure 6-4 – Isolating the Impact of Goal Ambiguity on the Politician’s Relative Utility from Combining Purposes



Notes: The lines are computed as the difference between the second and third terms of inequality (1) from Proposition 1 or $(Corr(\varphi, \tau) + 1)^2(4\alpha - 2\mu - 1)(2\mu - 1) - 4(2\alpha - 1)^2$ for various values of $Corr(\varphi, \tau)$ where $\alpha = \alpha_i = 0.9$. The graphs, thus, isolate the loss to the politician from goal ambiguity predicated on inefficient resource allocations after removing the coordination gains to combining the functions. $Corr(\varphi, \tau)$ represents the correlation with respect to how environmental shocks affect the possibility of achieving each of the goals. The variable φ is associated with R , and τ is associated with T .

I close this section by summarizing Propositions 6-4 and 6-5 as well as Corollary 6-5.1 using Figure 6-4 above. The figure shows the loss in politician utility generated by a multiple-purpose regulator over a range of values for $Corr(\varphi, \tau)$ when the agency’s clarity over its beliefs—as measured by c —assumes three different values. By removing the first term from inequality (1) in Proposition 6-1 and assuming that $\alpha_i = \alpha = 0.9$ as before, Figure 6-4 isolates the effects of uncertainty on multiple-purpose regulator performance. It does so by eliminating both the multiple-purpose regulator’s role in coordinating allocations as well as the possibility that the agency is wrong about its beliefs. As the graph demonstrates, not only does uncertainty

regarding the principal's preference reduce the politician's payoffs when the functions are combined relative to case when they are not in keeping with the prediction of Proposition 6-4, the magnitude of this effect is significantly impacted by the correlation between how social and environmental changes affect the two functions. In addition to reinforcing the finding in Proposition 6-5 that higher correlations between φ and τ diminish the loss associated with every level of uncertainty, the greater spreads between the lines at higher correlations support Corollary 6-5.1 which demonstrated that efforts to reduce ambiguity are more effective when $Corr(\varphi, \tau)$ approaches one.

Melding Organization, Environment, and Politics

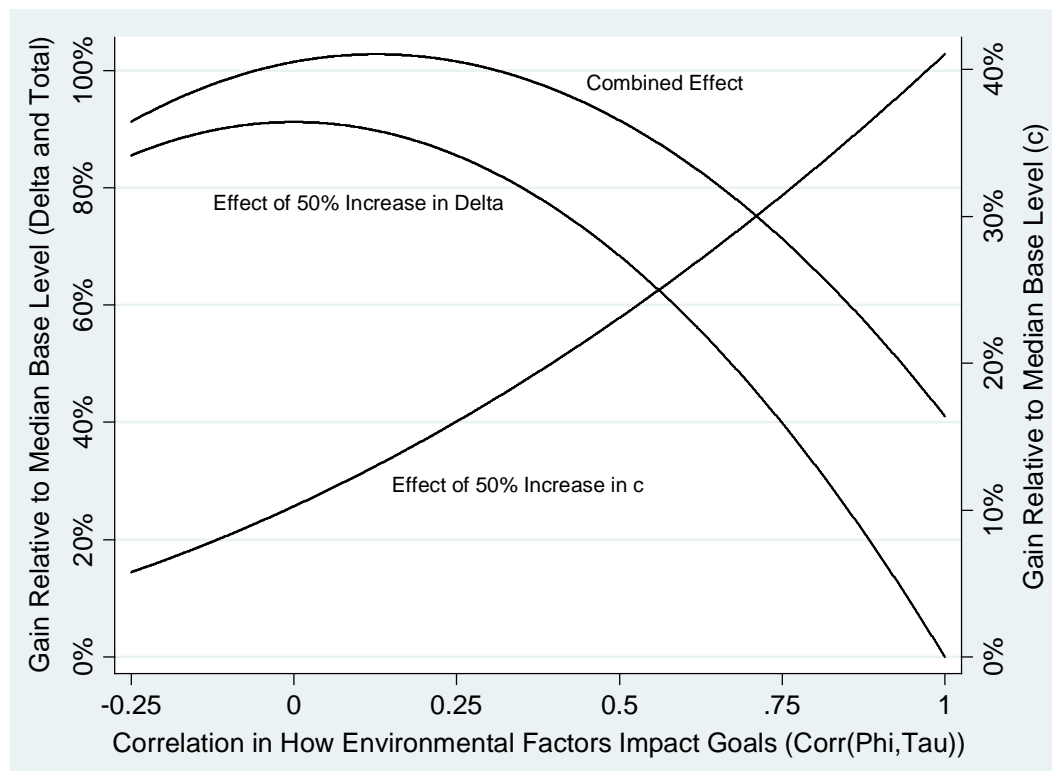
In many ways, the propositions and corollary derived in this chapter reinforce the insights from Parts I and II of this dissertation. In the same way that MMS's resource evaluation activities could be targeted to support offshore oversight or regulatory resources could be used to improve tax collection, the results in Propositions 6-1 and 6-2 highlight how—under the right conditions—the multiple-purpose regulator's ability to shift resources between its functions can increase the possibility that both goals are achieved. At the same time, the results in this chapter also comport with the findings from the cross-sectional analysis of PART scores which demonstrated that goal ambiguity can help explain the inferior performance of multiple-purpose regulators. As asserted in the goal ambiguity scholarship, imprecise goals can foster operational inefficiency, thereby acting as an anchor on organizational performance. Here, the agency allocates resources in a suboptimal manner to buffer itself against uncertainty over its political principal's goals.

Yet, by introducing a role for exogenous environmental conditions, the analysis in this chapter has also extended the work in Parts I and II. In the same policy space, the influx of independent oil producers and shift to deep water drilling in the Gulf of Mexico beginning in the early 1990s affected MMS's regulatory function quite differently from its leasing and tax collection functions. Appealing to the interplay between whether shifts in the broader social and industry environment affect the functions in similar or dissimilar ways, I have shown that external factors can exacerbate or mitigate the gains that multiple-purpose regulators achieve through task coordination as well as the losses that such agencies absorb through goal ambiguity. In particular, Proposition 6-5 demonstrates that when the correlation is high between how environmental conditions affect the probability of success on the two functions, goal ambiguity is likely to present less of an impediment to multiple-purpose regulator performance. In contrast, Proposition 6-3 reveals that correlations close to zero are most conducive to achieving the greatest gains through merging the goals.

As a result, the theoretical work in this chapter presents a more nuanced view of how the tradeoff between coordination and ambiguity actually operates to affect multiple-purpose regulators. In fact, as summarized in Figure 6-5 below, whether shifts in political preferences resulting, for example, from changes in the ideology of the party in control can simultaneously inspire reorganizations in large part depend upon the ways in which the environment affects each goal. Similarly, efforts either by the agency or the politician to reduce or eliminate agency goal ambiguity are likewise affected by the underlying association between the functions themselves. The figure makes these points more concretely by showing the effects on the relative gain to combining functions from 50% increases to both δ ($\delta = 4/3$ to $\delta = 2$) and c ($c = 0.6$ to $c = 0.9$). The gains are measured relative to the median value of the difference in utility from

combining as opposed to separating R and T at the initial levels of δ and c (which in this case occurs at $Corr(\varphi, \tau) = 0.375$). Furthermore, I set $\alpha = \alpha_i = 0.75$ and so, like Figures 6-3 and 6-4, I assume that the agency is correct in its belief about which function the politician values more highly.

Figure 6-5 – The Changing Roles that Clarity and Political Preferences Can Play in Organizational Design



Notes: The figure displays the impact on the politician's relative preference for combining the functions from a 50% increase to both δ and c where δ increases from $4/3$ to 2 and c increases from 0.6 to 0.9 . The total percentage gain from the combination of both changes as well as the percentage gain from just the increase in δ are shown on the left y-axis. The gain from increasing c only is shown on the right y-axis. The percentage change is computed as the gain to combining functions at each level of $Corr(\varphi, \tau)$ for a given 50% increase divided by the relative advantage of combining the functions for the median value which occurs at $Corr(\varphi, \tau) = 0.375$. In all cases, $\alpha = \alpha_i = 0.75$.

While the choice of α does not affect the insights derived from the figure, as discussed previously, whether the agency is actually correct in its belief does affect the conclusions. Thus, unlike the case where the agency guesses wrongly—where ambiguity can actually improve the performance of a multiple-purpose regulator—the graph demonstrates that a 50% increase in

clarity can increase the total payoff to the politician of combining functions by over 40% relative to the median initial level. Still, the impact varies dramatically depending on how the shocks similarly or differentially affect the underlying functions. Unlike the large gain in relative utility derived from clarifying the politician's preferences when the correlation is strongly positive, increasing clarity has very little ability to increase the relative payoff achieved by merging the goals into one agency when the correlation is close to zero or negative.

In support of Propositions 6-2 and 6-3, the story is very different for increases in the politician's relative preference for joint success on the goals. When environmental conditions affect the functions in exactly the same way where $Corr(\varphi, \tau) = 1$, the politician's relative payoff is unaffected by her relative preference for success on both. This follows because, relative to the case where the politician makes the allocation decision without observing φ and τ , a perfect positive correlation eliminates the chance that the multiple-purpose regulator can improve how the budget is distributed among the functions. On the other hand, for correlations around zero, the combined agency's ability to coordinate based on the realizations of the random variables can significantly increase the politician's payoff as that politician becomes more concerned about the joint success of the goals. In fact, at $Corr(\varphi, \tau) = 0$, a 50% increase in δ is associated with over a 90% increase in the politician's utility relative to the base median level. Further, because coordination is most valuable when shocks affect the functions in unrelated ways, even at moderately negative correlations, the gains can be quite large if political turnover brings with it a principal that more highly values both functions. Alternatively, a similar shift may occur when a dramatic event, such as the Gulf oil spill, causes people to reassess their preferences.

However, beyond demonstrating how the politician's gains to combining or separating the functions rests on several factors including her preferences, agency uncertainty, and exogenous goal correlations, the insights derived in this chapter also have implications for identifying and predicting the sources of difficulties in existing multiple-purpose regulators. In policy environments where the functions are similarly impacted by external shocks, the results suggest that multiple-purpose regulators are likely to face fewer organizational impediments originating from priority ambiguity. Yet as Corollary 6-5.1 predicts and Figure 6-5 above demonstrates, efforts to increase agency clarity are also likely to be more productive in these situations. As a result, even these insights suggest a tradeoff. High correlations between the functions make political and agency attempts to clarify goals more productive since the probability that ambiguity comes into play in the agency's decision making is greater. At the same time, ambiguity is less costly here since the allocation the multiple-purpose regulator chooses to hedge against its uncertainty will more closely resemble the politician's preference.

In examining agencies charged with implementing more highly correlated regulatory and non-regulatory functions, we may expect the multiple-purpose regulator to be less plagued by goal ambiguity. At the same time, the model predicts that the gains these agencies achieve through coordination will be smaller as well. On the other hand, when evaluating multiple-purpose regulators whose functions are less similarly affected by external shocks, the operational difficulties created by priority ambiguity are likely to be greater. Yet, for these agencies, the alternative may be equally as troubling, for in combining the functions in these circumstances, the multiple-purpose regulator can greatly enhance performance by shifting resources internally. Thus, while the outward manifestations of goal ambiguity and conflict may be particularly salient when the shocks have uncorrelated effects on the goals, the potentially hidden role that

the multiple-purpose regulator plays in coordinating efforts to achieve both functions may be extremely important in these situations as well.

Conclusion

In addition to generating sharp predictions about how political, environmental, and operational factors interact to affect regulatory design and performance, this chapter's theoretical discussion reveals that one cannot think about how external influences impact agency behavior without simultaneously appreciating the underlying organizational structure. Even assuming that agencies attempt to maximize their political principal's preferences, I have shown that whether the functions are combined or separated can take us far in predicting whether those preferences are implemented. Without relying on a wedge between the preferences of the politician and its agent, I show that the politician's choice to merge or separate goals can still cause agency allocations to diverge widely from that principal's preferred mix. At the same time goal ambiguity encourages multiple-purpose regulators to shift allocations to guard against the uncertainty, separating tasks can limit the ability of agencies to make adjustments to better reflect the politician's true preferences.

Yet, in addition to demonstrating how internal organizational features affect an agency's interaction with its broader environment, the theoretical framework developed in this chapter has simultaneously shown that one cannot understand agency organizational issues without looking outside the agency. For example, in the context of the scholarly work examining priority goal ambiguity's implications for organizational behavior, the analysis in this chapter has shown that the related failures can be offset by the gains that multiple-purpose regulators bring in allocating resources more optimally. The role that a combined agency can play in coordinating tasks can

be particularly valuable when the political principal cares about achieving both goals as well as when environmental circumstances affect the goals in unrelated ways.

Moreover, the results have shown that in specific situations, goal ambiguity can even bring benefits. When the multiple-purpose regulator is incorrect in its beliefs about the relative preference of the politician over the goals, increasing the uncertainty associated with those beliefs also increases the politician's expected payoff. As the discussion in Chapter 5 about the importance of political influences in defining MMS's priorities has emphasized, such a situation where the agency completely misreads the principal's preferences may be relatively rare. Further, the overwhelming focus in the goal ambiguity scholarship on the impact of uncertainty on agency operations—relative to whether the agency is correct in its beliefs—also supports this supposition. Even so, by melding the various factors that may impact multiple-purpose regulator behavior, one can see the possibility that the politician, in the interest of improving agency performance, might want to purposely remain vague regarding her preferences.

Possibly also because I incorporate operational, political, and environmental features into the model, in comparison to the relatively sparse formal literature examining agencies which combine purposes (Dewatripont et al. 1999, 2000, O'Connell 2006, Ting 2002), the results derived in this chapter reveal a much greater part to be played by multiple-purpose regulators in achieving government goals. For example, Mathias Dewatripont, Ian Jewitt, and Jean Tirole—in focusing on the role that multiple tasks can have in weakening the market's ability to perceive employee talent—provide little reason to combine purposes (1999, 2000). Furthermore, in analyzing how divergent preferences of the politician relative to agency personnel can affect the decision to coalesce functions, Michael Ting shows that only when the principal prefers greater

levels of policy implementation on both tasks than agency officials will the politician consider combining tasks (2002).

In contrast, the analysis in this chapter predicts that a political principal who seeks to maximize her utility will consider combining regulatory and non-regulatory goals in a variety of situations. In particular, the multiple-purpose regulator's advantage in coordinating the functions relative to when the tasks are separated suggests that combining regulatory and non-regulatory goals can be optimal when the politician values success on both. Moreover, although the operational impediments introduced by goal ambiguity present a drag on multiple-purpose performance, these effects are mitigated when the correlation between how environmental factors affect achievement of each goal increases.

In the concluding chapter to this study, I use the insights derived from the model developed in this chapter to draw the analyses in this dissertation closer together. In particular, I show how interactions between political preferences, views about how the regulatory and non-regulatory functions correlate, and the operational realities of multiple-purpose regulators—issues at the center of the theoretical discussion—can help us to better understand both the statistical results in Part I as well as the structure of government oil and gas functions described in Part II. In doing so, I recount the features of multiple-purpose regulators that can help us to more fully understand the performance and behavior of such agencies as well as the reasons why these organizational arrangements are needed. Finally, I show that the understandings derived from the statistical, case study, and theoretical analyses provide a clear path for future study to further deepen our understanding of both the repercussions of and purpose behind government structures which mix regulatory and non-regulatory goals.

Chapter 7

Operations, Organization, Politics, and Environment

Chapter 1 of this study began by recounting three tragedies—the worldwide financial disaster, the Gulf oil spill, and the Japanese nuclear meltdown—from the perspective of the policy debates they inspired. In their belief that organizational design was important to understanding agency behavior, the commentators involved in these discussions shared a perception that the particular agency structure common to each tragedy—one which asked the regulator to concurrently balance non-regulatory tasks—was at least partially to blame. The quest to identify the causes of the financial crisis focused specific attention on how the Federal Reserve balanced its roles to supervise banks, conduct monetary policy, and protect consumers (Committee on Financial Services 2010). In the case of the battle to control leaking nuclear waste at the Fukushima Daiichi power plant in the wake of the tsunami in Japan, commentators denounced the government bureaucratic structure which placed the regulator in control of oversight, NISA, within the Ministry responsible for promoting nuclear power (Onishi & Belson 2011). The explosion on the *Deepwater Horizon* drill ship which led to the spill of 4.9 million barrels of oil into the Gulf of Mexico prompted critics to blame MMS's design—one which combined offshore oil and gas oversight with responsibilities for both lease sales and tax collection—as integral to explaining why the calamity occurred (Flournoy et al. 2010, Forbis 2011, Honigsberg 2011).

These beliefs not only prompted strong accusations, but, in each case, they also inspired dramatic organizational changes to the underlying regulatory infrastructure. The decision to create the Consumer Financial Protection Bureau meant that the consumer protection functions associated with the Federal Reserve as well as several other financial sector government agencies

were to be relocated in a new \$350 million plus agency (Consumer Financial Protection Bureau 2012). In response to the nuclear meltdown, the Japanese government disbanded NISA and shifted governmental oversight of nuclear plants to its Environment Ministry (Japan Times 2011). The disastrous Gulf oil spill inspired the Obama administration to carve MMS into three separate bureaus within the Department of the Interior (Interior), each responsible for one of the former agency's roles as regulator, tax collector, and leasing agent (Salazar 2010).

As the examples surely indicate, these organizations, which I have referred to as multiple-purpose regulators in this dissertation, demand our attention. This is true not just because the perceived breakdowns associated with their structures prompted fundamental reorganizations, but also because these disasters have demonstrated the potentially dire consequences for human welfare when failure occurs in regulated industries. The oil spill was an environmental disaster of epoch proportions, whose consequences for the Gulf region—although possibly less than once feared—will still not be fully known for many years (Walsh 2011). Even in 2012, the unemployment rate in the U.S. remains over 8% which prior to the recent crisis was a level not reached since the early 1980s (Bureau of Labor Statistics 2012). Moreover, housing indices are still reaching new lows (Standard & Poor's 2012). At the same time, Japan—in addition to shutting down much of its existing nuclear infrastructure which once generated one third of its total electricity—is faced with a nuclear cleanup that promises to take several decades coupled with 90,000 dislocated residents who have little prospect of ever returning to their homes (Fackler 2012, Joskow & Parsons 2012).

Recapping the Approach

Inspired by these disasters, the purpose of this research has been to generate a better understanding of agencies which combine regulatory and non-regulatory functions like those associated with the aforementioned tragedies. To do so, I have employed a diverse set of methodological approaches and incorporated scholarship from a variety of disciplines. At various points, insights from literatures focused on goal ambiguity, policy implementation, capture, alternative regulatory approaches, organizational theory, and bureaucratic autonomy and control have all figured prominently in the discussion. Furthermore, the analyses themselves have included roles for statistical tests, case study, and formal modeling. While Part I focused on a large cross section of U.S. federal agencies where I employed techniques of econometric analysis, in Part II, I engaged in the close study of the agency most directly associated with the Gulf oil spill, MMS. In contrast, in Part III, I developed a mathematical model to both describe how the insights generated in Parts I and II interact as well as to introduce additional factors which are important to understanding the behavior of multiple-purpose regulators.

By employing a diverse set of methods and incorporating a variety of academic viewpoints, this study has been premised on the idea that a more complete understanding of agencies tasked with regulatory and non-regulatory functions can only be achieved by exploiting the advantages that each perspective brings. The analysis has revealed that a fixation on just one aspect of a multiple-purpose regulator's activities and relationships can be limiting in a quest to determine why such agencies are formed and how they behave. In addition to keeping us from seeing all aspects of the problem, this research has shown that an overly narrow focus can also sometimes mislead. For example, while incorporating an appreciation for priority goal ambiguity is surely important to understanding the performance of regulatory agencies asked to fulfill other

competing goals, without also considering other operational, organizational, political, and social forces, one can simultaneously miss how these influences alter the way the agency reacts to the goal ambiguity it faces. A more comprehensive awareness of what such agencies do cannot be attained without examining the external environment surrounding the agency. At the same time, one cannot know how these external forces will affect agency performance without similarly considering the organizational design of the multiple-purpose regulator itself.

Using this approach, the research has been able to shed light on many of the important questions raised at the outset of this study. Are the recent tragedies evidence of a broader problem of organizational design or are they isolated cases? Did the multiple-purpose regulators assigned to the policy areas associated with the failures contribute to the problems? If so, how did they? If regulators charged with important non-regulatory tasks do worse, why is this true? Do such agencies always choose to subvert their regulatory functions? If not, what determines how they assimilate competing assignments? Can they accomplish both tasks simultaneously? To the extent multiple-purpose regulators operate inefficiently, why do we see them? Is this simply a shortcoming of the policy process or are there good reasons for combining purposes?

Recognizing that research is a continuous process, part of this concluding chapter is dedicated to recommending areas for further inquiry. However, before turning to these extensions, I first review the primary insights derived from this dissertation that can help answer the questions which drove this study. In doing so, I show how the various results—albeit derived using very different methodologies—can be used to further inform the others to present a fairly complete view of regulators asked to simultaneously fulfill other missions. In the next four sections, I present the findings of this study in terms of the forces which affect the multiple-purpose regulator's behavior and performance. I do so according to whether they originate from

within the agency at its operational level; at the level of the agency as a whole or its organizational level; in the context of the political setting surrounding the agency; or through the social, industrial, and environmental conditions associated with the agency's policy arena. I demonstrate how these operational, organizational, political, and environmental pressures interact in rather specific ways to drive the observable behaviors of these government agencies. Consistent with the general approach in this study, in combination, these forces encompass a large range of possible influences on the performance of multiple-purpose regulators. While admittedly not a complete treatment of all the issues associated with explaining multiple-purpose regulator behavior, the approach and insights derived in this dissertation certainly move us closer to that goal.

Operations: Balancing Ambiguity and Coordination

The cross-sectional study in Part I of this research presented a puzzle. On one hand, using OMB's Program Assessment Rating Tool (PART) scores on goal performance, the econometric analysis of 144 federal agencies and 1,062 federal programs over a seven year period in Chapter 2 indicates that agencies which have been assigned both regulatory and non-regulatory tasks perform worse than those which have not. Using a mix of descriptive statistics, statistical tests, and regression analyses, the results consistently reveal the drag on organizational performance which occurs when the regulator is also tasked with another function relative to non-regulators and those which only regulate. The statistical estimates hold controlling for agency funding, political preferences, and—by introducing federal departmental dummy variables—the abundance of factors that make agencies in different policy areas different. In addition to the statistical significance of the effect for each test, the magnitudes are large as well, where

separating multiple-purpose regulators into their components is associated with roughly a 20% increase in assessed performance. These results are not explained by differences in how OMB examiners rated these agencies or by differences in how they rated regulatory and non-regulatory programs. Furthermore, the inferior PART assessments of multiple-purpose regulators are not generally shared by agencies which combined other types of programs. The analysis thus supports the particular attention placed on the organizations of NISA, MMS, and the Federal Reserve in attempting explain the Japanese nuclear meltdown, Gulf oil spill, and financial disaster.

As discussed in Chapter 3, from the perspective of the political science, economics, and legal literatures on goal ambiguity, these results might not seem particularly surprising. Although it is curious that the poor performance is not necessarily shared widely among agencies that combine other purposes, nevertheless, research has shown that assigning agencies too many tasks can lead to ambiguous or conflicting goals, resulting in poor agency performance. Furthermore, the regressions and descriptive statistical results in Chapter 3 generally support this hypothesis. Using data from OPM's Federal Human Capital Surveys for 2006 and 2008—which in total incorporated over 400,000 completed federal employee surveys—I find that agencies where personnel are more able to connect their work with organizational goals perform better. In addition to the descriptive evidence and simple hypothesis tests, the regression results reveal a statistically significant effect of goal clarity on goal performance. The impact is practically important as well, where a one standard deviation or roughly 7% increase in the number of agency personnel that strongly agree that they know how their work relates to agency goals is associated with a 7.6% increase in performance on those goals.

The analysis further demonstrates that the relationship between goal ambiguity and performance also connects to agencies that combine regulatory and non-regulatory missions. Regulators simultaneously charged to perform non-regulatory functions have statistically significantly lower numbers of employees that understand how their jobs relate to agency goals. In addition to showing that the correlation between multiple-purpose regulators and ambiguity is a strong predictor of lower performance, including both the measure of goal ambiguity and the multiple-purpose regulator dummy in the regression equation reduces the effect of the latter by 14%. Furthermore, these results are robust to changes in the goal ambiguity measure as well. Varying how the indicator is computed and including other related questions from the OPM's surveys does not at all impact the significant levels or general magnitudes of the estimates.

On the other hand, the statistical analyses in Chapter 3 also show that priority goal ambiguity is not the only reason why regulators that combine other functions are less apt to achieve their goals. Although, as described, goal ambiguity does dampen the direct relationship between multiple-purpose agencies and PART performance, these same agencies continue to perform worse even after controlling for goal ambiguity and conflict. Furthermore, this effect is not simply due to random noise. Rather, holding constant the extent to which their personnel understand how their jobs relate to agency goals, these organizations continue to perform worse in both a statistically significant and numerically important way. After controlling for ambiguity, combining regulatory and non-regulatory purposes is still associated with over a 15% decline in goal performance, depending on the regression specification. Thus, while multiple-purpose regulators do perform worse, one cannot simply appeal to priority goal ambiguity to explain why.

In large part, the purpose of the examination of the political and organizational history of MMS in Part II has been to understand this puzzle. And, in fact, the case does further elucidate the cross-sectional results. Although overwhelmingly seen as a clear-cut example where the conflicts created in combining offshore oil and gas oversight, development, and revenue collection led to regulatory failure, a closer investigation reveals a somewhat more complicated role for conflicting goals at MMS. Instead, the study in Chapter 4 reveals an agency beset with the simultaneous—and equally important—problem of synchronizing tasks that relied on each other for their proper implementation. James Q. Wilson tells us:

The tasks of operators in private organizations with vague goals become defined through a process of trial and error and internal negotiation that is then tested by competitive natural selection...The tasks of operators in government agencies with vague goals are probably set in much the same way, but without a regular test of the fitness of the solution. (Wilson 1989, p. 33)

Clearly, in addition to being defined by the employees themselves, the tasks of government organizations can be quite different from the goals they are implemented to achieve.

MMS's creation and development reveals how important this distinction can be. Although the goals associated with the tasks may conflict, the tasks themselves required to fulfill these goals may require extensive coordination over the course of their implementation. As perhaps best revealed in the political environment surrounding MMS's creation, these issues can result in equally problematic outcomes. The turf battles and problems of duplication and omission that plagued BLM and USGS—which prior to MMS's creation had separate responsibility for pre-leasing and lease management respectively—were less about goal ambiguity and more about the inability of the agencies to synchronize their activities.

This priority on communication and coordination carried over to MMS's Offshore Energy group as well. Regardless of whether their overarching goals conflicted, the Resource Evaluation, Leasing and Environmental, and Regulatory programs each relied heavily on the

others for their completion. As recounted in MMS's 2005 Budget Justification, Resource Evaluation staff were "involved in all phases of OCS program activities," even supporting regulatory efforts given their expertise in understanding the geological underpinnings of offshore minerals discoveries (Minerals Management Service 2004, p. 108). Moreover, in their separation after the Gulf disaster, Secretary Salazar stressed the need for these functions to remain in close contact to ensure that each would be carried out successfully (Department of the Interior 2010).

The primacy of task synchronization at MMS further extended to Offshore Energy's interactions with the Revenue Management group as well. A 2007 Subcommittee on Royalty Management report noted that the two groups were better able to synchronize their activities because they were both part of the same agency. Yet, while focusing attention on the inefficiencies associated with the processes by which the Bureau of Indian Affairs and the Bureau of Land Management relayed onshore production data to Revenue Management, the report noted that improvements needed to be made in "intra-Bureau coordination" as well (Subcommittee on Royalty Management 2007, pp. 83, 86). With greater linkages between computer systems and efforts of personnel in the two groups to better communicate, the performance of Interior's oil and gas revenue collection function could be greatly improved (Subcommittee on Royalty Management 2007, Government Accountability Office 2008). Thus, even if the oil and gas tax collection goals were incompatible with regulatory goals—which might be to the extent that revenue increases requiring oil and gas production would be limited by more stringent regulation—the underlying tasks employed to support the two sets of goals need to be synchronized.

When viewed from the perspective of the tradeoff between task coordination and goal ambiguity, the confusing cross-sectional results in Part I become less so. The coordination necessary to perform regulatory and non-regulatory functions that are situated in a particular agency can help explain why goal conflict is not a complete explanation of poor performance in these agencies. To the extent such agencies attempt to manage goal conflicts and ambiguity, they may do so at the expense of exacerbating difficulties in synchronizing the underlying tasks. Thus, for any given level of goal clarity, multiple-purpose regulators will be constrained by more extensive coordination problems, resulting in lower overall performance. In the context of the regression analysis, holding goal ambiguity constant, one should then still expect multiple-purpose regulators to be less able to achieve their goals.

Organization: Design Inside and Between Agencies

But how can multiple-purpose regulators manage goal conflicts and ambiguity in their organizations? The analysis in Parts II and III helps answer this question. The creation of MMS in 1982 was an effort to simultaneously improve Interior's management of offshore development as well as its oil and gas tax collection efforts. At one extreme, the decision to combine evaluation, leasing, and oversight within MMS's Offshore Energy group provided a structure which could mitigate the potential for "problems of neglect, duplication, and turf wars" that plagued BLM and USGS (Committee on Appropriations 1982, p. 40). As reported by GAO in 1981, the "fragmentation of authority and accountability" symbolized by the presence of two agencies "contribute[d] to the weakness of Federal minerals management" (Peach 1981, p. 6). Thus, in structuring Offshore Energy such that the Resource Evaluation, Leasing and Environmental, and Regulatory programs were closely connected, MMS was designed with the

express purpose of overcoming the coordination problems that plagued the implementation of these functions previously.

Yet, this interlaced structure was not simply a feature of Offshore Energy's original design. In addition to supporting the core tasks of the others, certain activities including environmental studies, for example, could easily be used in the decision-making processes of all three groups simultaneously. Moreover, unlike with Revenue Management, the personnel responsible for evaluating oil and gas tracts, facilitating lease sales, conducting studies, and inspecting platforms and drilling rigs occupied the same regional offices along the Gulf of Mexico and the Pacific OCS. Even around the time of MMS's breakup, Offshore Energy was still characterized by its interconnectedness. As Secretary Salazar noted in his July 2010 report detailing MMS's dissolution, the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement would be "created from a single bureau in which functions and process are tightly interconnected, making the separation complicated and demanding" (Department of the Interior 2010, p. 6).

In contrast to the tight knit Offshore Energy group, the organizational design which defined the association between these same oil and gas development functions and MMS's tax collection operations represented the other extreme. While also a reaction to perceived inadequacies in the former structure, ensuring the independence of the Revenue Management group was an attempt to minimize the potential for goal subversion which characterized USGS's management of these same tax collection and auditing functions. As reported by the Linowes Commission, merging its revenue management and core scientific functions in its regional offices relegated revenue collection to a secondary status at USGS (Commission on Fiscal Accountability of the Nation's Energy Resources 1982). Thus, in designing MMS such that tax collection would no longer be

subverted, Secretary of the Interior Watt—backed by federal legislation—created a fully independent group within the agency to support oil and gas revenue goals.

As a standalone unit within the agency, MMS's Revenue Management group simultaneously demonstrates that independence does not necessarily require assigning the impacted function to a completely separate organization. As Chapter 4 reveals, the division between Revenue Management and Offshore Energy within MMS was cemented through various institutional features. In addition to locating the core of the tax collection function in Lakewood, CO—over a thousand miles away from the Gulf of Mexico where the bulk of Offshore Energy personnel resided—the extensive differences in job descriptions and skills of the personnel in the two groups further ensured their relative isolation from each other. Moreover, MMS lacked fully integrated computer systems as well as formalized procedures for communication between the two groups, evidence which suggests that even at the operational level the two were divided (Subcommittee on Royalty Management 2007, Government Accountability Office 2008).

Given the separation geographically, functionally, and operationally, the fact that the two groups had difficulty synchronizing their efforts where necessary is not unexpected. Moreover, the division serves to undermine popular claims that merging tax collection with regulation impeded MMS's ability to provide adequate oversight (Flournoy et al. 2010, Honigsberg 2011). The patterns of congressional hearings which indicate that revenue management—and not regulation—was the target of critical attention contradict the claim that oversight was subverted to support a well-organized and proficient tax group. Moreover, complicating the theory that allowing Offshore Energy to partially offset its budget through a tax increase exacerbated the goal conflict, the group's pattern of declining appropriations only reversed itself when Congress began to allow the offset. Furthermore, because the tax increase only applied to non-producing

oil and gas leases, if anything, this action would have made MMS a more stringent regulator, rejecting oil and gas company production plans to protect this source of revenue.

While the individual pieces of evidence suggest that Revenue Management had little impact on the Offshore Energy group—and certainly did not subvert it at the operational level—these findings should not surprise us as, from the outset, MMS was designed to mitigate the potential for goal subversion of this type. If anything, it was regulation that impeded tax collection by not forwarding revised production reports to support the latter’s auditing efforts (Government Accountability Office 2008). However, as I have described, this issue originated from coordination breakdowns—not goal conflict.

Thus, the analysis in Chapter 4 has indicated—using the example of MMS’s creation and historical development—how organizational design can be employed to manage the opposing forces of goal ambiguity and task coordination. By structuring Revenue Management in isolation from Offshore Energy, Interior and Congress limited the potential for the goal conflict that existed prior to its creation. This conflict impeded USGS’s efforts to prevent large scale tax evasion and theft which were costing the federal government hundreds of millions of dollars per year (Commission on Fiscal Accountability of the Nation’s Energy Resources 1982). Concurrently, reacting to the inability of BLM and USGS to coordinate their activities, the design of Offshore Energy dramatically tightened the connection between the resource evaluation, leasing, and regulatory processes. However, the interconnectedness of these programs fostered an environment where priority goal ambiguity could inhibit agency performance. Structuring the offshore energy management functions to operate in such close proximity thus opened up the possibility that a subset of them could be subverted much like what occurred at USGS.

Politics: How Ongoing Conflicts Can Be Resolved

However, simply because Offshore Energy was structured with less concern for the possibility that goal ambiguity might undermine performance does not alone tell us how that conflict—if it were to occur—should reconcile itself. The bulk of the academic and popular commentary in the wake of the aforementioned disasters has made it seem a foregone conclusion that regulation would be neglected for the other function under these circumstances. Chapter 5 addresses this claim. In doing so, I show that political and social forces can shape how the multiple-purpose regulator allocates resources among its missions. In some ways, the importance of politics is made clear even through the statistical analyses in Chapters 2 and 3. In each regression, an agency's political inclination is shown to be a statistically and numerically significant predictor of OMB's evaluation of the extent to which it achieved its goals. Holding other factors constant, a shift toward more conservative preferences of a size equivalent to the difference between the preferences of the Departments of Labor and the Interior is associated with a 20% increase in assessed agency performance. Given that the PART program was created during the conservative George W. Bush administration, this finding indicates that ideology likely played a role—consciously or subconsciously—in influencing the evaluations themselves.

Yet, the importance of politics extends beyond its influence over how the performance of individual agencies is viewed. The behaviors cited to support the claim that MMS subverted its regulatory charge—the collaborative approach it took to oversight particularly with major oil producers and its apparently dismissive stance toward environmental concerns (Eilperin & Higham 2010, Urbina 2010a)—can be directly tied to the political and social pressures it felt during its last 15 years. This study has been less concerned with whether the behaviors cited actually constituted regulatory laxity and capture, and more with what drove them. In that spirit,

Chapter 5 examines whether political and social forces can help us understand MMS's shift to cooperation and relative emphasis on offshore development.

The analysis reveals how a vast collection of mechanisms were incorporated to guide the actions of MMS's Offshore Energy division. These included directives, orders, and proclamations as well as statutes, appropriations levels and riders, and hearings. The patterns associated with MMS's budgets as well as its congressional oversight demonstrate how political views regarding the appropriate balance between regulation and offshore development shifted toward favoring the latter beginning around the mid-1990s. Although regulation was a primary focus of over 20 congressional hearings in MMS's first 13 years, during its next 15 years ending in 2009, regulatory issues were an important consideration in only one. Similarly, while Offshore Energy in general suffered dramatic losses to its budget until the mid-1990s, these losses were more heavily concentrated with its leasing and resource evaluation functions. At the same time, the group's subsequent recovery was also not equally shared by its three subcomponents. During the period from 1996 through 2009, the Leasing and Environmental program enjoyed budget increases totaling almost \$5 million more than the Regulatory program. Considering the former had lost \$29 million to regulation during the previous 14 years, the relative change was quite dramatic. Similarly, increases in appropriations directed to resource evaluation and regulation were roughly equivalent over the latter period. Yet, in comparison to MMS's first 14 years when Resource Evaluation suffered losses totaling almost \$20 million more than the Regulatory program, the last 14 years revealed a clear shift in the preferences of the agency's political superiors.

In addition to exhibiting indirect influence over the agency, in many cases MMS's activities were directly provoked by political action. For example, President H.W. Bush's 1990 moratoria

on drilling off the southwest coast of Florida, over large portions of the Pacific coast, and in the North Atlantic required MMS to buy back leases that had already been issued. Moreover, in response to the announcement, Offshore Energy closed its Atlantic coast office and significantly reduced operations in Alaska and along the Pacific OCS (Minerals Management Service 1995, p. 100). Yet, the President's directive also helped fuel the dramatic influx of small oil producers into the Gulf as larger companies began to look to foreign waters for more profitable opportunities. This shift, along with the 1995 Deep Water Royalty Relief Act which provided tax relief to encourage deep water drilling, prompted Offshore Energy to announce publicly that it was focusing more of its direct oversight on the inexperienced operators while engaging the major oil companies in jointly developing deep water drilling standards. Given that the technology for safely exploring deep water was still being developed at the time, by collaborating, MMS was following a strategy it had used ten years prior under similar circumstances.

Thus, Offshore Energy's decision shift its regulatory approach was not simply its own doing. Rather, the agency was impelled to react to congressional and presidential decisions which in the face of declining appropriations had repercussions for how MMS could approach its tasks. Moreover, MMS's experimentation with negotiated rulemaking—another alternative regulatory approach—was a response to President Clinton's National Partnership for Reinventing Government as well as his Executive Order 12,866, both of which endorsed regulatory innovation. For its efforts, MMS garnered numerous awards in the mid to late 1990s. For instance, the agency received one of its Vice Presidential Hammer Awards for its efforts to “become customer focused” (Hammer Awards 1997). Yet, those outside of government supported the political push for regulatory collaboration as well. The 1993 OCS Policy

Committee, composed of environmental interests and industry personnel, encouraged MMS to reinvent its regulatory program “based on consensus” (Minerals Management Service 1994).

Much like its decision to engage regulated entities more collaboratively—an approach which critics assert was evidence of laxity—the extent to which MMS emphasized development over environmental protection can also be tied to MMS’s political circumstances. Certainly, the broad shifts in congressional oversight and appropriations decisions over the last half of MMS’s existence provide strong evidence that any move Offshore Energy made to place more emphasis on development was encouraged politically. Yet, the evidence has shown that social preferences were shifting in the same direction. As the Gallup polls described in Chapter 5 show, relative to 1990, when almost four times as many respondents believed environmental protection should be emphasized over economic growth, the average respondent in early 2010 actually supported economic growth relative to environmental protection.

In many cases, political efforts to encourage exploration were blunt. In addition to weakening presidential moratoria—culminating with both President George W. Bush’s 2008 decision to open up the entire OCS to oil and gas exploration and President Obama’s subsequent support for this initiative—patterns of lawmaking show how intense the drive to expand production was. Statutes passed up to the mid-1990s reflected a measured approach to offshore production. For example, in the wake of Exxon Valdez, the 1990 Oil Pollution Act set up a pollution fund and secured funding for research on oil pollution. Yet, beginning with the aforementioned Deep Water Royalty Relief Act, which was a clear statement of congressional interest in oil and gas development, each subsequent law over the remaining 15 years of MMS’s tenure as offshore oil and gas manager focused on development or revenue collection. Perhaps

this is best exemplified in the 2006 Gulf of Mexico Energy Security Act which mandated that MMS attempt to lease almost six million acres previously held under moratoria in one year.

Under these conditions, it might be difficult to see how MMS could have chosen a different balance. To the extent the agency instead emphasized its oversight function relative to its role in facilitating U.S. energy independence, MMS would have been acting in a manner that opposed political and social desires. It would also have had to choose a path that resisted the laws and directives intended to guide its behavior. While this does not suggest that the agency's preferences did not matter, the analysis does show how important these political and social forces can be. In addition to demonstrating how structural division within an agency can mitigate goal discord, the case of MMS reveals how external political and social forces in addition to the internal agency culture can play important roles in defining priorities in multiple-purpose regulatory agencies. Moreover, the evidence suggests the possibility that multiple-purpose regulators, relative to single purpose agencies, may in their design offer more opportunities for such political manipulation. The very fact that the tasks can simultaneously support different goals may allow political principals leeway in driving agency behavior.

Environment: Revealing the Goal Interdependencies

The analysis in Part II thus indicates how political and social pressure can influence the ongoing policy balance of a multiple-purpose regulator. At the same time, the theoretical study in Chapter 6 shows how political preferences can also affect initial organizational choices. Much like the decisions to create MMS in 1982 and later break it up in 2010, the model developed in Part III examines how politicians can make these evaluations in light of the operational and organizational factors that drive behavior at agencies that combine purposes. To do so, the

analysis begins from the aforementioned industry shift that helped redefine the regulatory approach at MMS in the mid-1990s.

As the influx of independents and move to deep water by major oil producers encouraged the Regulatory program to direct more of its resources to the novice oil and gas companies, these industry developments simultaneously prompted the group to adopt a more collaborative approach to regulating the experienced operators. Yet, while making efforts to ensure offshore safety more difficult, these developments impacted Offshore Energy's other subcomponents and Revenue Management quite differently. Not only did these industry shifts—propelled by the Deep Water Royalty Relief Act—dramatically increase lease sales, they simultaneously “generated billions of dollars in bonuses and rents” (Minerals Management Service 2004, p. 80). As a result, massive growth in deep water drilling, which spread MMS's regulatory resources even more thinly than its lagging budgets already had, separately boosted the outputs of MMS's leasing and revenue management functions considerably.

In explicitly modeling the relationship between how environmental shifts—such as the changes that occurred in the Gulf in the mid-1990s—can impact the agency's ability to achieve its underlying goals, the theoretical study in Chapter 6 introduces an additional driver of multiple-purpose regulatory behavior and performance. Incorporating the notion that these social and industry changes can influence efforts to achieve agency purposes in different ways, the analysis also ties together the insights derived in Parts I and II. Specifically, I show that whether these circumstances, which are often out of the control of the agency, affect the goals in similar or dissimilar ways impacts the tradeoff that the politician faces in separating or combining regulatory and non-regulatory purposes.

When the exogenous shocks tend to impact the functions in similar ways—as in the case of the tax collection and oil and gas development missions at MMS—the advantages derived from combining purposes lessen. A high correlation between how environmental conditions affect the functions minimizes the value that a combined agency can bring in allocating resources between them based on its observations of these conditions. Although the agency might enjoy particular policy area information and expertise which can allow it to better coordinate the underlying tasks to achieve both goals, highly correlated shocks lessen this advantage over the politician. In this case, the principal—even without being privy to the information—is more able to predict how the environment will affect the possibility for success on each goal. As a result, when the effects are highly correlated, the agency will be unlikely to be able to improve much on the politician’s initial allocation.

In contrast, when social and industry conditions impact the goals in unrelated ways, with less expertise and knowledge, the politician’s ability to properly allocate resources is limited. Thus, it is here where combining functions provides the most value to the politician. Separating the tasks into two agencies—or structuring the organization to encourage independence among the purposes—limits the possibilities for reallocations after exogenous shifts. Yet, when the impacts are uncorrelated, the politician will be unable to allocate resources to best achieve her preferences. Because the combined agency, retaining jurisdiction over both goals, can react to environmental shifts in ways that most benefit the politician, the multiple-purpose regulator’s relative advantage in task coordination becomes valuable. Much like the close proximity of the programs of the Offshore Energy group enabled them to support each other, the ability of a multiple-purpose regulator to manage both assignments can enable it to move resources between tasks to present the best opportunity to realize both goals.

However, in addition to further delineating the importance of task coordination in certain policy spaces, the model also establishes an important role for multiple-purpose regulators when political principals have a strong predilection for simultaneously achieving both missions. While the study in Chapter 5 showed that political preferences impacted how the Offshore Energy group balanced its oil and gas development and environmental safety roles, the theoretical analysis considers the case when politicians place a high priority on achieving success on both goals. Given their comparative advantage in coordinating the underlying functions, multiple-purpose regulators can offer the politician the best chance for concurrent success on both missions, thereby maximizing the politician's utility in the case where this is a priority.

The analysis also shows that while the multiple-purpose regulator's ability to coordinate tasks is most beneficial with uncorrelated shocks, this is also when goal ambiguity can be most costly. The results therefore support the conclusions in Chapters 4 and 5 which emphasize the tradeoff that exists between coordination and goal ambiguity. When the correlation between how shocks affect the agency's ability to achieve the goals is large and positive, priority goal ambiguity presents less of a concern. Goal ambiguity affects performance because it impacts operational decisions. Such ambiguity introduces the possibility that the agency is incorrect in its beliefs regarding the politician's preferred allocation over the two goals. To manage the uncertainty, the agency allocates its resources to hedge against the possibility that it is wrong, pushing it to choose a more even distribution. Still, this is not optimal in the sense that the agency's mix diverges from what it would like to choose if priority goal ambiguity were not a factor. Moreover, the agency's implementation choice also shifts from the politician's preference. This inefficiency is what makes goal ambiguity costly.

Even so, when the correlation between how environmental conditions affect the goals becomes more largely positive, the politician's preferred mix moves closer to the agency's allocation because the possibility that both goals can be achieved increases. This prompts the principal to desire a more even distribution. As a result, the distance between the politician's preferred allocation and the multiple-purpose regulator's choice shrinks, mitigating the effect that uncertainty can have in undermining a multiple-purpose regulator's performance. Of course, the other side of the coin is that, as the impact of environmental conditions on the relative difficulty of achieving each goal diverges, ambiguity becomes more detrimental to multiple-purpose performance.

The theoretical results not only affirm the insights derived from the study of MMS in Chapters 4 and 5 as well as the statistical results in Chapter 3, they further define how the tradeoff between outward goal conflict and the task coordination underlying goal achievement operates. When the correlation in how environmental factors impact the purposes grows, goal ambiguity presents less of an impediment to the performance of multiple-purpose regulators. Yet, at the same time, high correlations limit the value that multiple-purpose regulators provide in coordinating the tasks underlying the competing goals. On the other hand, when the exogenous shifts impact the goals in unrelated ways, the potential for goal ambiguity to detract from performance as well as the importance of harmonizing the tasks underlying the goals both increase.

This analysis has implications for interpreting the behavior of existing multiple-purpose regulators. Much like at MMS, where salient goal conflicts obscured the role that coordination played in structuring activities, the results suggest that synchronization is most important when priority goal ambiguity starts to become more pervasive—as correlations shift from positive to

zero. Thus, when salient failures prompted by goal conflicts appear, we can expect the potentially overlooked value that multiple-purpose regulators bring in their ability to optimally adjust to environmental conditions will be critical as well. As a result, the decision to break up such arrangements may bring costs that are equally as large. On the other hand, when the goals are affected by exogenous conditions in positively related ways, goal ambiguity does little to detract from multiple-purpose regulator performance. At the same time, the payoff that coordination brings in these circumstances is lower as well.

When ideological shifts occur through electoral turnover or because of disasters such as those discussed in this dissertation, considering these correlations can provide insight into how reorganization can and should proceed. For example, as a preference for simultaneous success on both tasks increases, multiple-purpose regulatory agencies are more likely to be able to best maximize political payoffs. Still, for any given level of ambiguity, the gains that such agencies bring are most relevant when environmental shifts impact the goals in unrelated ways. Similarly, while ambiguity is less detrimental to agency performance when the correlation in how goals are affected by social and industry conditions becomes more positive, this is also when attempts to increase clarity over preferences are easier. Because at a high positive correlation the multiple-purpose regulator is more likely to face the situation where ambiguity can affect its decision making, efforts to increase clarity here impact a larger set of outcomes. As a result, although politicians' efforts to clarify their preferences—which could be accomplished through more detailed statutes or oversight hearings—will be most pressing when exogenous shocks affect the goals in unrelated or dissimilar ways, this is also when these efforts to achieve clarity will be most difficult to obtain.

At a broader level, the theoretical results further reinforce the notion that, when it comes to combining regulatory and regulatory tasks, organization is important. Even when agencies seek to maximize politicians' preferences, whether the functions are assigned to one or two agencies can make a difference. Because of goal ambiguity, even agency personnel faithful to their political principals can misallocate resources, reducing politician utility when regulatory and non-regulatory purposes are combined. At the same time, separating tasks can simultaneously result in allocations that diverge widely from principal preferences since such arrangements limit the ability of better informed agencies to adjust per conditions. Moreover, this effect can be exacerbated when politicians more highly value success on both goals or when the correlation between how environmental shocks affect the goals is close to zero.

Extending the Research

As suggested at the outset of the chapter and confirmed through the above review of the study's results, understanding the behavior and performance of multiple-purpose regulators is complex. It necessitates considering many factors at once. Without examining the associated operational, organizational, political, and environmental features of the policy space, one can be led to conclusions which are either misleading or incomplete. At the same time the nature of the external forces are important to understanding the internal workings and behavior of multiple-purpose regulators, features originating from within the agency cannot be disentangled from the external environment either.

For example, determining how important priority goal ambiguity is to a particular context requires considering the agency's organization, policy environment, and particular political pressures. If the agency is structured such that the functions are tightly intertwined, Chapter 4

suggests ambiguity is more likely to play a role. Moreover, when the policy environment impacts the possibility for success on each goal in unrelated or negatively related ways, the theoretical results in Chapter 6 also indicate that ambiguity will be particularly salient. Yet, whether the operational inefficiencies introduced by goal ambiguity—which could be large in this case—will drive policymakers to carve up the agency is concurrently determined by political preferences. To the extent that politicians simultaneously value achieving both functions, they may optimally choose to retain the multiple-purpose regulator despite the operational losses introduced by ambiguity. When the correlation between how shocks affect the functions is close to zero, the losses associated with the rigidity of single purpose agencies can easily outweigh the gains from greater goal clarity, especially given a strong preference for the joint attainment of the missions. While this is just one example, it nevertheless illustrates how the external environment and internal forces interact in particular ways to affect the behavior and determine the existence of multiple-purpose regulators.

At the same, the breadth of factors influencing regulators that combine other functions also suggests numerous opportunities for extending this study. Perhaps the most apparent possibility is in taking the insights derived in this examination to other policy environments. Although the statistical analyses in Part I utilize a large sample of federal agencies to demonstrate that multiple-purpose regulators perform worse and that goal ambiguity is not a complete explanation for the finding, this research also employs the case method to develop a subset of the insights that are core to the dissertation's arguments. In particular, the examination of MMS in Chapter 4 revealed the importance of the tradeoff between task coordination and goal conflict in explaining how the agency functioned. This operational feature was clearly displayed through the relationships both between the groups within Offshore Energy as well as between it and Revenue

Management. Furthermore, the significance of the interplay between synchronization and ambiguity was also evident in Interior's management of federal oil and gas processes prior to MMS's creation. Given that MMS is almost universally seen as textbook example of how goal conflict can undermine a multiple-purpose regulator's ability to fulfill its oversight function, the fact that harmonizing the underlying activities was also central to the agency's performance is evidence for its importance.

Nevertheless, examining how broadly the operational tradeoff between these two forces applies certainly presents a useful next step. For example, does coordination of the various tasks that underlie the U.S. Forest Service's conflicted goals play an important role in its behavior? Similarly, one might consider how reorganizations of multiple-purpose regulators affect the interaction. For example, although it was not moved to the Department of Homeland Security, the Bureau of Alcohol, Tobacco and Firearms (ATF) was split into two components as part of the 2002 Homeland Security Act. Given that the enforcement functions of ATF were transferred to the Department of Justice while the regulatory and tax collection functions were kept in the Department of the Treasury, a restructuring such as this might offer additional insights on how the relative prominence of ambiguity and synchronization is affected by organizational shifts. Finally, extending the cross-sectional analysis to include a measure of the relative importance of task coordination to agency personnel as well as perceived success in achieving it might be an alternative mechanism to test how broadly the insights surrounding the operational tradeoffs uncovered in this study apply.

While certainly not a last word, one piece of evidence which points to this study's applicability to other environments can be found way back at the beginning of Chapter 1. Testifying in support of the current organizational structure of the Federal Reserve, current

Chairman Ben Bernanke as well as former Chairman Paul Volcker both highlighted how the expertise acquired in its role as U.S. central banker made the agency more prepared to supervise complex financial institutions. At the same time, this supervisory role supported the Federal Reserve's ability to make better decisions as lender of last resort. Moreover, the data the agency gathered through its examinations were seen as important inputs in setting monetary policy. Summarized by Chairman Bernanke, "Even as the Federal Reserve's central banking functions enhance supervisory expertise, its involvement in supervising banks of all sizes across the country significantly improves the Federal Reserve's ability to effectively carry out its central bank responsibilities" (Committee on Financial Services 2010, p. 8). Thus, while critics of the Federal Reserve argued that its role in conducting monetary operations combined with its bank regulatory function introduced goal ambiguity at best and conflict at worst, much like MMS, coordinating the underlying tasks was seen as integral by those within the agency.

The characteristics of the political environment may present one useful criterion for selecting another policy area to analyze. In some ways, the analysis of the impact of political and social forces on MMS's Offshore Energy division was simplified by the homogeneity of the desires of these groups, particularly beginning in the mid-1990s. This, of course, is not to say that offshore oil and gas policy is not contested. In the context of the 5-Year Program, which outlines Interior's long-term OCS leasing plan (see, e.g. Minerals Management Service 1998, p. 59-62), the debate between environmentalists and industry is fierce. Yet, as the analysis in Chapter 5 highlights, during the last half of the agency's tenure as offshore regulator, politicians and advisory groups both encouraged MMS to adopt a more collaborative regulatory stance. Moreover, congressional, presidential, and social preferences were unified in their push for greater exploration of the OCS. As stressed in the scholarship on the policy process, this is

certainly not always the case. In fact, one impediment to effective policy implementation is that political actors must compromise in drafting the statutes or other direction that guide agency actions (Lowi 1979, Warwick et al. 1975). As a result, the orders that agencies use to define how policy is to be implemented can be vague or even inconsistent (Majone & Wildavsky 1984).

Choosing a policy area or time period characterized by a more contentious political environment could extend my study in two directions. First, it would enable me to incorporate into the analysis a more explicit role for multiple principals with divergent objectives. As the empirical literature on political control of government agencies has shown, in a contested environment, both Congress and the president can exert substantial influence over agency activities at various times (Moe 1985, 1990, Snyder & Weingast 2000, Wood & Waterman 1991, 1994). Still, how divergent preferences play out in the context of agencies which combine regulatory and non-regulatory functions would appear an unsettled issue.

Second, focusing attention on a multiple-purpose regulator operating in a policy space characterized by warring principals might simultaneously present a case where the agency displays substantial levels of discretion at certain times. Theoretical studies have generally found that competition among principals increases an agency's opportunities to pursue its own objectives (Dixit 1997, Moe 1984). Thus, investigating an empirical context characterized by political principals who disagree might simultaneously reveal a situation where the extent to which the multiple-purpose regulator's preferences stray from those principals affects outcomes to a larger extent. At a minimum, extending the current theoretical model to account for multiple principals as well as deviating agency preferences would likely to impact the parameters under which politicians combine or separate purposes in interesting ways.

Examining in more detail whether political principals are more or less able to control multiple-purpose regulators in comparison to other types of agencies presents a related possibility for future study. The case of MMS reveals that separating potentially conflicting goals can be achieved within organizations and that introducing more autonomy does not necessitate that the functions be located in different agencies. This dissertation has simultaneously argued that when the groups supporting the goals are closely connected in the organization—such as was the case both with MMS’s Offshore Energy group as well as USGS prior to MMS’s creation—the possibilities for goal ambiguity, conflict, and subversion are greatly enhanced. Further, the study in Chapter 5 shows that political preferences can drive how these conflicts are reconciled.

However, relative to single purpose agencies, are agencies which combine tightly knit regulatory and non-regulatory purposes more susceptible to principal control? Because of its specific focus on multiple-purpose regulators, this study has largely ignored this question. Yet, the mere presence of multiple missions introduces a lever for principals to use in shaping administrative activities which, by definition, does not exist with single purpose agencies. To the extent one goal opposes another, focusing the agency’s attention on the preferred goal does not in itself threaten the existence of the multiple-purpose regulator. On the other hand, in dividing the goals between two agencies, the politician potentially encounters a more resistant agency since no real alternative exists to the agency not trying to achieve its purpose. As a result, one might think that agencies that combine multiple goals would be more amenable to political efforts to guide their activities. Interestingly, this intuition opposes some theoretical work studying the political decision to combine purposes in government agencies. This research suggests that situating multiple goals in one agency increases discretion because the difficulty

facing the principal in acquiring information about the agency's activities increases (Ting 2002). Given these competing intuitions, comparing levels of discretion among multiple-purpose regulators and single purpose agencies either through a broad statistical analysis or a case study of agencies in related policy areas would certainly help clarify this aspect of the decision to combine or separate purposes.

Several possibilities exist to broaden the study in Chapter 6 which analyzes how environmental conditions affect the decision to merge or separate regulatory and non-regulatory functions. Here, I mention two. As part of the motivation for explicitly incorporating a role for exogenous environmental shifts in the theoretical model, I discussed how changes in the oil and gas industry in the 1990s affected the various components of MMS in particular ways. Unlike the regulatory group which reacted by adopting a more collaborative approach to oversight and shifting its attention to newly arriving independents, the increased interest in offshore oil and gas drilling simultaneously aided other groups at MMS in accomplishing their objectives.

However, these changes were at least partially triggered first by President George H. W. Bush's far reaching 1990 moratoria and second by the Deep Water Royalty Relief Act in 1995. In simplifying the analysis of the political decision to combine or separate purposes in the model, I assume that political preferences are largely unrelated to the realization of the environmental conditions surrounding the agency. However, this example—which seems applicable to other contexts as well—suggests that introducing a role for the interplay between political and environmental forces may present a useful next step. Associated with the underlying correlation in how these shocks affect the possibility for success on each goal, recognizing that political principals can impact the probability of specific realizations of environmental conditions implies

that incorporating this feature has the potential to substantially increase the richness of the theoretical results.

In addition to modeling the interrelationship between the environmental context and political preferences, one associated avenue for further empirical inquiry involves explicitly investigating how beliefs regarding the correlation between the goals are determined. In the model, the correlation which describes whether the goals are similarly or dissimilarly affected by the environment is given and known by all participants. However, even in the context of the current analysis, one might instead envision this parameter as being determined by the politician's beliefs regarding how the two goals are affected by their policy space. As long as these beliefs continue to be common knowledge, the model's results would not change. Even so, recognizing the possibility that the true correlation might not be known opens up interesting possibilities for further study.

For example, an individual's beliefs regarding how the goals are affected by their environment may change over time. Applied to the case of the creation and subsequent breakup of MMS, one can begin to see how these views can affect organizational choices. The decision to combine the offshore leasing and oversight functions in 1982 was driven by the perceived failure of USGS and BLM to coordinate their joint responsibilities. At the same time, the model in Chapter 6 highlights that when the environmental context affects the goals in unrelated ways, the gains from combining via synchronization are large. Moreover, relative to when the correlation is negative, the potential costs of goal ambiguity are smaller as well. Given that the offshore oil spill record particularly beginning in the latter half of the 1970s was solid, and that the last major spill was more than a decade earlier, it is interesting to speculate whether this might have affected perceptions of the underlying relationship between the two functions. In the

event that popular perception of the correlation moved closer to zero—that shocks did not always affect achievement of development and safety goals in opposing ways—the model would predict it more likely that the goals would be combined which, of course, is what occurred.

In contrast, after the *Deepwater Horizon* tragedy, popular views on the relationship between offshore safety and production changed markedly. For example, the series of Gallup Poll results measuring people's valuations of the tradeoff between energy production and environmental protection shows in May 2010—after the onset of the spill—a strong move toward greater concern for the environment. In fact, although a greater percentage favored energy production prior to spill, after it, the percentage of people that preferred environmental protection climbed above those favoring energy production to a level last reached by the first poll in the series in 2001. To the extent that increased concern for environmental issues mirrors views on the relationship between achieving development and oversight goals, one should expect popular perceptions of how shocks affect those goals to be more negatively related relative to 1982 when MMS was created. Given that there is less to gain through task coordination as correlations move away from zero and more to lose from goal ambiguity as correlations become more negative, Secretary Salazar's Order 3299 mandating the split of leasing and resource evaluation from oversight makes sense. While this analysis is clearly speculative, it does suggest that gathering more evidence on popular and political beliefs associated with how regulatory and non-regulatory goals relate in various policy contexts would be useful.

To broaden the analysis, a final possibility for further study lies in ascertaining more definitively whether the insights generated through this research apply outside of the regulatory context. Although some researchers have suggested that regulators' performance may be particularly affected by vague goals (Chun & Rainey 2005a, Edelman 1967, Noll 1971), the

analysis in Chapter 2 reveals that regulatory programs, in comparison to non-regulatory programs, are not associated with lower goal attainment. Moreover, the literature on goal ambiguity is intended to apply to all types of government agencies and not just regulatory agencies. Yet, this research has examined the role of task coordination solely from the perspective of multiple-purpose regulators. Although the evidence from Chapter 2 suggests that agencies which combine non-regulatory purposes do not necessarily perform worse than other agencies after controlling for political preferences and departmental differences, this finding does not hold for every combination. As a result, examining whether coordination might play a role within the larger universe of agencies which combine purposes would help to further clarify the conditions under which harmonizing tasks associated with potential conflicting goals is most important.

Furthermore, this study has only cursorily referenced organizations outside of the public sector. Nevertheless, while not connected to agency goal ambiguity, as I have indicated, task coordination has certainly been considered in broader discussions of organizational structure (see, e.g., Simon 1976, Thompson 1967). Moreover, recent theoretical research has investigated the advantages and disadvantages of centralized and decentralized arrangements in private organizations (Alonso et al. 2008, Rantakari 2008). These studies are premised on the tradeoff that exists in firms between coordinating the activities of its divisions while simultaneously allowing these groups to adapt to their particular environments. Similarly, a large literature in corporate strategy investigates when organizations should consider diversifying their product offerings, a decision which is at least partially based on the synergies present in producing those products (Collis & Montgomery 2005). Of course, while there are important differences between public and private sector organizations (Kelman 2005), incorporating the broader

literature on organizations can undoubtedly yield new insights to both sharpen and deepen the core claims made in this research regarding the tradeoff between goal ambiguity and underlying task coordination.

Multiple-Purpose Regulators in the Current Political Context

Just one month after the onset of the Gulf oil spill, in May 2010, President Obama announced his administration's decision to divide MMS into three separate agencies. The decision was based on the idea that to eliminate the "scandalously close relationship between oil companies and the agency that regulates them," the new organization needed "to separate the people who permit the drilling from those who regulate and ensure the safety of the drilling" (Obama 2010c). The reorganization—which created the Office of Natural Resources Revenue, the Bureau of Ocean Energy Management (BOEM), and the Bureau of Safety and Environmental Enforcement (BSEE)—took roughly 18 months to complete. It further returned Interior's oil and gas management functions to an organizational design which closely resembled the structure which predated MMS, a structure that by all accounts failed its purpose. In addition, Secretary of the Interior Salazar noted in his associated implementation plan that after completing the year and a half restructuring, BOEM and BSEE would need to maintain "close program coordination" to ensure a "functioning and effective process" (Department of the Interior 2010, p. 11).

In contrast, in his January 2011 State of the Union address, President Obama highlighted a plan to streamline government administration in which he described the wastefulness:

There are 12 different agencies that deal with exports. There are at least five different agencies that deal with housing policy. Then there's my favorite example: The Interior Department is in charge of salmon while they're in fresh water, but the Commerce Department handles them when they're in saltwater. I hear it gets even more complicated once they're smoked. (Obama 2011)

Citing the need to get “rid of waste,” the President promised a plan to “merge, consolidate, and reorganize” government to increase efficiency (Obama 2011).

On the surface, President Obama’s comments in his State of the Union address appear to be a direct rebuff of the type of organizational design which he just eight months earlier had endorsed as a solution to the perceived breakdown of the government’s management of federal oil and gas functions. Moreover, in some ways, they do present a contradiction. Yet, embedded in President Obama’s two declarations is the idea that optimally structuring government functions generally and regulatory and non-regulatory functions more specifically to perform at their best is complicated. Furthermore, if we are not careful, we can fall into the trap of repeating old mistakes. As the dissolution of MMS into three separate entities coupled with its creation almost thirty years before demonstrates, the perceived corrections for each problem—coordination breakdowns and goal ambiguity—can produce an oscillating cycle between breakups and mergers. When the issue appears related to coordination failures including turf wars and neglect, merging the tasks into one tight knit agency will seem a good option. However, such remedies may generate or exacerbate organizational confusion and goal subversion, prompting the breakup of the agency in response. As the political science and public administration literatures have aptly demonstrated, it is certainly true that functions can be combined haphazardly into government entities through the policy process. Still, there may be good reasons for doing so, even if they are not as apparent when viewed solely from the perspective of the particular dilemma at hand.

The President’s two sets of comments highlight the tradeoff between goal ambiguity and task coordination as well as the importance of organizational design in mitigating or exacerbating these operational issues. Even so, the analysis in this dissertation has demonstrated

that organization and operations are but two of the forces in a group which also includes roles for political and social preferences as well as the interactions between the goals in the context of their policy environment. This research has attempted to lay out these forces—operations, organization, politics, and environment—in a way that presents a subtle but coherent roadmap to better understanding the behavior and performance of agencies tasked with regulatory and non-regulatory purposes. Particularly given that reorganizations cost money, take time, and impose dislocations on employees, it seems prudent to consider the broader set of effects on the behavior and performance of multiple-purpose regulators—not just those which appear most clearly in the context of the particular crisis at hand.

Appendix A

OMB Program Types for Analyses in Chapters 2 and 3

This appendix provides descriptions of the program types associated with the Office of Management and Budget's Program Assessment Rating Tool scores used in the analyses in Chapters 2 and 3.

Table 2-A – OMB PART Descriptions of Agency Program Types

Program Type	Description
Regulatory-Based	Programs that accomplish their mission through rulemaking that implements, interprets or prescribes law or policy, or describes procedure or practice requirements
Block/Formula Grant	Programs that provide funds to State, local, and tribal governments and other entities by formula or block grant
Capital Assets and Service Acquisition	Programs that achieve their goals through development and acquisition of capital assets or the purchase of services
Competitive Grant	Programs that provide funds to State, local, and tribal governments, organizations, individuals and other entities through a competitive process
Credit	Programs that provide support through loans, loan guarantees and direct credit
Direct Federal	Programs where services are provided primarily by employees of the Federal Government
Research and Development	Programs that focus on knowledge creation or its application to the creation of systems, methods, materials, or technologies

Notes: Descriptions adapted from OMB's Program Assessment Rating Tool Guidance No. 2008-01 (OMB 2008).

Appendix B

Proofs and Derivations for Chapter 6

This appendix contains the proofs and more complicated derivations associated with the results described in Chapter 6.

Proof 1

To show that $P(\varphi = 1, \tau = 1) = P(\varphi = 0, \tau = 0) = \frac{Corr(\varphi, \tau) + 1}{4}$ and that $P(\varphi = 1, \tau = 0) = P(\varphi = 0, \tau = 1) = \frac{1 - Corr(\varphi, \tau)}{4}$, I begin with the definition of covariance for discrete random variables. In the context of this application, the definition can be written as:

$$Cov(\varphi, \tau) = \sum_{\varphi} \sum_{\tau} \varphi \tau P(\varphi, \tau) - \mu_{\varphi} \mu_{\tau}$$

where $P(\varphi, \tau)$ represents the probability associated with any given realization of φ and τ and μ_{φ} and μ_{τ} represent the mean of φ and τ respectively. When either $\varphi = 0$ and $\tau = 0$, $\varphi \tau P(\varphi, \tau) = 0$. Furthermore, because both φ and τ are Bernoulli random variables where $P(\varphi = 1) = p$ and $P(\tau = 1) = q$, by the definition of a Bernoulli random variable, $\mu_{\varphi} = p$ and $\mu_{\tau} = q$. Given that I have assumed that $p = q = 1/2$, substituting into the expression for covariance gives:

$$Cov(\varphi, \tau) = (1)(1)P(\varphi = 1, \tau = 1) - 1/4$$

Rearranging, this expression becomes:

$$P(\varphi = 1, \tau = 1) = Cov(\varphi, \tau) + 1/4$$

Using the definition of correlation described in the text where:

$$Corr(\varphi, \tau) = \frac{Cov(\varphi, \tau)}{\sqrt{Var(\varphi)Var(\tau)}}$$

and substituting for the variance of both random variables which is also described in the text as

$Var(\varphi) = Var(\tau) = 1/4$, the covariance becomes:

$$Cov(\varphi, \tau) = Corr(\varphi, \tau)/4$$

Substituting into the expression for $P(\varphi = 1, \tau = 1)$, we have:

$$P(\varphi = 1, \tau = 1) = \frac{Cov(\varphi, \tau) + 1}{4}$$

Employing the properties of probability, I can now compute the other three possibilities as:

$$P(\varphi = 1, \tau = 0) = P(\varphi = 1) - P(\varphi = 1, \tau = 1) = \frac{1}{2} - \frac{Cov(\varphi, \tau) + 1}{4} = \frac{1 - Cov(\varphi, \tau)}{4}$$

$$P(\varphi = 0, \tau = 1) = P(\tau = 1) - P(\varphi = 1, \tau = 1) = \frac{1}{2} - \frac{Cov(\varphi, \tau) + 1}{4} = \frac{1 - Cov(\varphi, \tau)}{4}$$

$$P(\varphi = 0, \tau = 0) = P(\varphi = 0) - P(\varphi = 0, \tau = 1) = \frac{1}{2} - \frac{1 - Cov(\varphi, \tau)}{4} = \frac{Cov(\varphi, \tau) + 1}{4}$$

Thus, $P(\varphi = 1, \tau = 1) = P(\varphi = 0, \tau = 0) = \frac{Corr(\varphi, \tau) + 1}{4}$ and $P(\varphi = 1, \tau = 0) =$

$$P(\varphi = 0, \tau = 1) = \frac{1 - Corr(\varphi, \tau)}{4}.$$

■

Proof 2

To derive the probabilities in Figure 6-2, I first demonstrate that $R = 1$ and $T = 1$ is only a feasible outcome when $\varphi = 1$ and $\tau = 1$. By definition, $P(R = 1) = r_i \varphi$ and $\varphi = \{0, 1\}$. Thus, $P(R = 1 | \varphi = 1) = r_i$, and $P(R = 1 | \varphi = 0) = 0$. Similarly, $P(T = 1) = t_i \tau$ and $\tau = \{0, 1\}$, both by definition. Thus, $P(T = 1 | \tau = 1) = t_i$ and $P(T = 1 | \tau = 0) = 0$. Yet, in order for $P(R = 1, T = 1) > 0$, $P(R = 1) > 0$ and $P(T = 1) > 0$. Because $P(R = 1) > 0$ and $P(T = 1) > 0$ are only possible when $\varphi = 1$ and $\tau = 1$, $R = 1$ and $T = 1$ is only feasible when $\varphi = 1$ and $\tau = 1$.

I next show that $P(R = 1, T = 1|\varphi = 1, \tau = 1) = r_i t_i$. By definition, $P(R = 1|\varphi = 1)$ and $P(T = 1|\tau = 1)$ are independent after φ and τ are observed. Using the definition of independence and substituting for $P(R = 1|\varphi = 1)$ and $P(T = 1|\tau = 1)$, $P(R = 1, T = 1|\varphi = 1, \tau = 1)$ can be written as:

$$P(R = 1, T = 1|\varphi = 1, \tau = 1) = P(R = 1|\varphi = 1)P(T = 1|\tau = 1) = r_i t_i$$

As stated, these probabilities have been derived after one observes that $\varphi = 1$ and $\tau = 1$. Yet, because the probabilities in Figure 6-2 are given from the politician's perspective, they are generated without knowledge of φ and τ . However, using the fact that $P(R = 1, T = 1) > 0$ is only possible when $\varphi = 1$ and $\tau = 1$, and that $P(R = 1, T = 1|\varphi = 1, \tau = 1) = r_i t_i$, I next compute $P(R = 1, T = 1)$ from the politician's perspective. To do so, I employ Bayes' rule:

$$P(R = 1, T = 1) = P(R = 1, T = 1|\varphi = 1, \tau = 1)P(\varphi = 1, \tau = 1)$$

This follows because $P(R = 1, T = 1) = P(R = 1, T = 1 \cap \varphi = 1, \tau = 1)$ as I have shown that

$P(R = 1, T = 1)$ can only occur when $\varphi = 1$ and $\tau = 1$. Using the fact that $P(\varphi = 1, \tau = 1) =$

$$\frac{Cov(\varphi, \tau) + 1}{4} \text{ from Proof 1, and that } P(R = 1, T = 1|\varphi = 1, \tau = 1) = r_i t_i, P(R = 1, T = 1)$$

simplifies to:

$$P(R = 1, T = 1) = r_i t_i \left(\frac{Cov(\varphi, \tau) + 1}{4} \right)$$

Because both R and T are Bernoulli random variables, we have that $P(R = 1) = E(R)$

where $E(R)$ constitutes the expected value of R . By the definition of expected value, I can write:

$$E(R) = E(R|\varphi = 1)P(\varphi = 1) + E(R|\varphi = 0)P(\varphi = 0)$$

Again applying the aforementioned property of Bernoulli random variables, $E(R|\varphi = 1) =$

$P(R = 1|\varphi = 1)$ and $E(R|\varphi = 0) = P(R = 1|\varphi = 0)$. Substituting for $P(R = 1|\varphi = 1)$ and

$P(R = 1|\varphi = 0)$ from above, and $P(\varphi = 1)$ and $P(\varphi = 0)$ from Proof 1, $E(R)$ simplifies to

$E(R) = r_i/2$. Thus, from the perspective of the politician, $P(R = 1) = r_i/2$. Applying the same steps, one can similarly show that $P(T = 1) = t_i/2$.

Finally, using the properties of probability, I compute probabilities for the other combinations of R and T as:

$$P(R = 1, T = 0) = P(R = 1) - P(R = 1, T = 1) = \frac{r_i}{2} - r_i t_i \left(\frac{\text{Cov}(\varphi, \tau) + 1}{4} \right)$$

$$P(R = 0, T = 1) = P(T = 1) - P(R = 1, T = 1) = \frac{t_i}{2} - r_i t_i \left(\frac{\text{Cov}(\varphi, \tau) + 1}{4} \right)$$

$$P(R = 0, T = 0) = P(T = 0) - P(R = 1, T = 0) = 1 - \frac{t_i}{2} - \frac{r_i}{2} + r_i t_i \left(\frac{\text{Cov}(\varphi, \tau) + 1}{4} \right)$$

which completes Figure 6-2. ■

Proof 3

To show that the constraint binds in the politician's maximization problem, I assume that it does not. Thus, the political principal's problem is:

$$\begin{aligned} \max_{r_i, t_i} & P(R = 1, T = 1)(1 + \delta) + P(R = 1, T = 0)\alpha + P(R = 0, T = 1)(1 - \alpha) \\ \text{s.t. } & r_i + t_i < 1 \text{ where } i = \{a, p\} \end{aligned}$$

Substituting for the probabilities from Proof 2 and rearranging, the problem becomes:

$$\max_{r_i, t_i} r_i t_i \delta \left(\frac{\text{Corr}(\varphi, \tau) + 1}{4} \right) + \left(\frac{r_i}{2} \right) \alpha + \left(\frac{t_i}{2} \right) (1 - \alpha)$$

$$\text{s.t. } r_i + t_i < 1 \text{ where } i = \{a, p\} \text{ and}$$

Because $0 < \alpha_L \leq \alpha_H < 1$ by assumption, $0 < \alpha < 1$ since $\alpha = \{\alpha_L, \alpha_H\}$. Focusing on the last two terms in the maximization problem, both $1 - \alpha > 0$ and $\alpha > 0$. Given this, the principal can always increase her utility by increasing either r_i , t_i , or both until the constraint binds if the agency or agencies implements its allocation.

Focusing on the first term, by definition, $-1 \leq Corr(\varphi, \tau) \leq 1$ and $\delta > 0$. Therefore, it must be true that $\delta \left(\frac{Corr(\varphi, \tau) + 1}{4} \right) \geq 0$ because neither $\frac{Corr(\varphi, \tau) + 1}{4} < 0$ nor $\delta \leq 0$ are possible outcomes. As a result, the smallest value of $\delta \left(\frac{Corr(\varphi, \tau) + 1}{4} \right)$ is 0 and, in this case, increasing either r_i , t_i , or both will have no effect on the politician's utility level. However, given that increasing either r_i , t_i , or both will positively impact the second and third terms of the politician's problem if the agency or agencies implement the politician's allotment, she will choose to increase either r_i , t_i , or both until the constraint binds.

I showed in the text that $r_p = r_a$ and $t_p = t_a$ when the principal decides to separate R and T between two agencies. In other words, when the politician chooses to allocate the goals to two different agencies, each agency implements the politician's allocation when it can affect the politician's utility (i.e. when $\varphi = 1$ for agency R and when $\tau = 1$ for agency T). Thus, all that remains is to demonstrate that when the politician chooses to combine the functions into one agency, the agency implements its entire allocation. I show in the text that when $\varphi = 1$ and $\tau = 0$, the agency's problem is:

$$\max_{r_a, t_a} r_a (c\alpha_i + (1 - c)(1 - \alpha_i))$$

where α_i is the agency's belief regarding the true value of α . Because $i = \{L, H\}$, and $0 < \alpha_L \leq \alpha_H < 1$, $0 < \alpha_i < 1$. Moreover, by assumption, $1/2 \leq c \leq 1$. Thus, it follows that $c\alpha_i + (1 - c)(1 - \alpha_i) > 0$. As a result, to maximize the principal's utility, agency RT will choose to implement all of the resources it receives from the principal on R when $\varphi = 1$ and $\tau = 0$. This is true because increasing r_a increases the agency's maximand.

As I show in the text, the agency's problem when $\varphi = 0$ and $\tau = 1$ is:

$$\max_{r_a, t_a} t_a (c(1 - \alpha_i) + (1 - c)\alpha_i)$$

In the same way that the agency implements all of its resources on R when $\varphi = 1$ and $\tau = 0$, here the agency uses all of the resources it receives on T when $\varphi = 0$ and $\tau = 1$. Since $c\alpha_i + (1 - c)(1 - \alpha_i) > 0$ as before, the agency can always increase utility by increasing t_a .

Finally, when $\varphi = 1$ and $\tau = 1$, as I show in the text, the agency's problem is:

$$\max_{r_a, t_a} r_a t_a \delta + r_a (c\alpha_i + (1 - c)(1 - \alpha_i)) + t_a (c(1 - \alpha_i) + (1 - c)\alpha_i)$$

Given that $c\alpha_i + (1 - c)(1 - \alpha_i) > 0$ and that $\delta \geq 0$, agency RT can always increase the maximand by increasing either r_i , t_i , or both. As a result, it will always implement its entire allocation from the principal.

Thus, both when the principal separates and when she combines the functions, the agency or agencies implements the allocation it receives. Furthermore, I have shown that the politician can always increase her utility by increasing either r_i , t_i , or both, assuming that the agency implements her allocation. As a result, $r_i + t_i < 1$ is false and the constraint must therefore bind. ■

Proof 4

To show that agency R and agency T can learn the value of α or its lower bound based on the allocation they receive, it is sufficient to demonstrate that this is the case for one of the agencies since each possesses the same amount of information as the other. Here, I focus on agency R . Further, I ignore the case where $r_p = 0$ since agency R 's belief regarding α is irrelevant in that case. Beginning with the situation where $0 < r_p < 1$, as I demonstrate in the text, the principal's allocation to agency R or r_p^* is given as:

$$r_p^* = \frac{1}{2} + \frac{2\alpha - 1}{\delta(\text{Corr}(\varphi, \tau) + 1)}$$

Rearranging to isolate α , the expression becomes:

$$\alpha = \frac{\delta(2r_p^* - 1)(\text{Corr}(\varphi, \tau) + 1) + 2}{4}$$

Because both δ and $\text{Corr}(\varphi, \tau)$ are common knowledge and the agency can use the same logic I have to derive the expression for the principal's optimal allocation of r_p (r_p^*), agency R can through simple computation determine α once it learns r_p^* .

When $r_p = 1$, it must follow that $r_p^* \geq r_p$ since, by the budget constraint, $r_p \leq 1$.

Substituting for r_p^* , we have:

$$\frac{1}{2} + \frac{2\alpha - 1}{\delta(\text{Corr}(\varphi, \tau) + 1)} \geq r_p$$

Rearranging to isolate α , the inequality becomes:

$$\alpha \geq \frac{\delta(2r_p - 1)(\text{Corr}(\varphi, \tau) + 1) + 2}{4}$$

Because, as before, δ and $\text{Corr}(\varphi, \tau)$ are common knowledge, upon learning that $r_p = 1$, agency R knows the lower bound for α . Thus, I have shown that, when the tasks are separated, the individual agencies can learn either the value or lower bound for α . ■

Proof 5

This proof and discussion involves four parts. First, I show that when the politician decides to combine the functions into one agency, and that agency observes $\varphi = 1$ and $\tau = 1$, then $0 \leq r_a^*, t_a^* \leq 1$ when $|2\mu - 1| \leq \delta$. Second, I show that when the politician decides to separate the functions, she will make allocations such that $0 \leq r_p^*, t_p^* \leq 1$ when $|2(2\alpha - 1)| \leq \delta(\text{Corr}(\varphi, \tau) + 1)$. Third, I show that $|2(2\alpha - 1)| \leq \delta(\text{Corr}(\varphi, \tau) + 1)$ is always at least as restrictive as $|2\mu - 1| \leq \delta$. Fourth, focusing on the more restrictive condition, I generate the

expression that the politician uses to decide whether to separate or combine functions when the condition is not met to replace that in Proposition 6-1 when the condition is met. Further, I describe how this new expression impacts the original Propositions 6-2 through 6-5 as well as Corollary 6-5.1 when $|2(2\alpha - 1)| > \delta(\text{Corr}(\varphi, \tau) + 1)$ given that the less restrictive condition holds or $|2\mu - 1| \leq \delta$.

When the functions are combined and agency RT observes that $\varphi = 1$ and $\tau = 1$, its optimal choice of r_a and t_a is based on $r_a + t_a = 1$ since the maximum total budget is 1 and the constraint binds as shown in Proof 3. As demonstrated in the text, the optimal levels of r_a and t_a can be computed as $r_a^* = \frac{\delta+2\mu-1}{2\delta}$ and $t_a^* = \frac{\delta-2\mu+1}{2\delta}$. However, since it is assumed that $r_a, t_a \geq 0$, the two expressions apply when $r_a^*, t_a^* \geq 0$. In contrast, when $r_a^*, t_a^* < 0$, the solution is $r_a = 0$ when $r_a^* < 0$, and $t_a = 0$ when $t_a^* < 0$. Thus, the expressions for the optimal levels apply when $r_a^* = \frac{\delta+2\mu-1}{2\delta} \geq 0$ and when $t_a^* = \frac{\delta-2\mu+1}{2\delta} \geq 0$. Rearranging the first expression yields $2\mu - 1 \geq -\delta$, and the second expression yields $\delta \geq 2\mu - 1$. Combining these, we have that $\delta \geq 2\mu - 1 \geq -\delta$ or $\delta \geq |2\mu - 1|$.

Using similar logic, I can show that $0 \leq r_p^*, t_p^* \leq 1$ when $|2(2\alpha - 1)| \leq \delta(\text{Corr}(\varphi, \tau) + 1)$. When the politician separates the functions, she chooses the allocation r_p and t_p based on $r_p + t_p = 1$ since the maximum total budget is 1 and constraint binds as shown in Proof 3. As shown in the text, the optimal allocation is given by the expressions $r_p^* = \frac{1}{2} + \frac{2\alpha-1}{\delta(\text{Corr}(\varphi, \tau)+1)}$ and $t_p^* = \frac{1}{2} - \frac{2\alpha-1}{\delta(\text{Corr}(\varphi, \tau)+1)}$. However, since it is assumed that $r_p, t_p \geq 0$, the two expressions apply when $r_p^*, t_p^* \geq 0$. In contrast, when $r_p^*, t_p^* < 0$, the solution is $r_p = 0$ when $r_p^* < 0$, and $t_p = 0$ when $t_p^* < 0$. As a result, the expressions apply when $r_p^* = \frac{1}{2} + \frac{2\alpha-1}{\delta(\text{Corr}(\varphi, \tau)+1)} \geq 0$ and when

$t_p^* = \frac{1}{2} - \frac{2\alpha-1}{\delta(Corr(\varphi, \tau)+1)} \geq 0$. Rearranging the first yields $2(2\alpha - 1) \geq -\delta(Corr(\varphi, \tau) + 1)$ and

the second yields $\delta(Corr(\varphi, \tau) + 1) \geq 2(2\alpha - 1)$. Combining these, we have that

$$\delta(Corr(\varphi, \tau) + 1) \geq |2(2\alpha - 1)|.$$

Next, I show that $\delta(Corr(\varphi, \tau) + 1) \geq |2(2\alpha - 1)|$ is as always at least as restrictive as

$\delta \geq |2\mu - 1|$. Rearranging the first inequality yields $\frac{\delta(Corr(\varphi, \tau)+1)}{2} \geq |2\alpha - 1|$ since the

absolute value of a positive number is that number. Since $1 \geq Corr(\varphi, \tau) \geq -1$, from among

the possible values for $Corr(\varphi, \tau)$, $\frac{\delta(Corr(\varphi, \tau)+1)}{2} \geq |2\alpha - 1|$ is least restrictive when

$Corr(\varphi, \tau) = 1$. If I can show that even substituting $Corr(\varphi, \tau) = 1$, $\frac{\delta(Corr(\varphi, \tau)+1)}{2} \geq |2\alpha - 1|$

is at least as restrictive as $\delta \geq |2\mu - 1|$, it follows that $\frac{\delta(Corr(\varphi, \tau)+1)}{2} \geq |2\alpha - 1|$ is more

restrictive when $Corr(\varphi, \tau) < 1$. Substituting $Corr(\varphi, \tau) = 1$, $\frac{\delta(Corr(\varphi, \tau)+1)}{2} \geq |2\alpha - 1|$

simplifies to $\delta \geq |2\alpha - 1|$.

I next compare $\delta \geq |2\mu - 1|$ and $\delta \geq |2\alpha - 1|$ under each of the possible combinations of α and α_i . They are $\alpha = \alpha_i = \alpha_H$, $\alpha = \alpha_H$ and $\alpha_i = \alpha_L$, $\alpha = \alpha_i = \alpha_L$, and $\alpha = \alpha_L$ and $\alpha_i = \alpha_H$.

Because $\alpha_H \geq 1/2$, the relevant conditions to compare when $\alpha = \alpha_i = \alpha_H$ are $\delta \geq 2(c\alpha_H +$

$(1 - c)(1 - \alpha_H)) - 1$ and $\delta \geq 2\alpha_H - 1$. If $2\alpha_H - 1 \geq 2(c\alpha_H + (1 - c)(1 - \alpha_H)) - 1$, then

$\delta \geq |2\alpha - 1|$ is at least as restrictive in this case. Conjecturing that this is true and simplifying

gives $\alpha_H \geq c\alpha_H + (1 - c)(1 - \alpha_H)$. Rearranging this expression and simplifying gives

$\alpha_H \geq 1/2$ which is true. Thus, $\delta \geq |2\alpha - 1|$ is at least as restrictive in the case where $\alpha = \alpha_i =$

α_H .

When $\alpha = \alpha_H$ and $\alpha_i = \alpha_L$, the relevant condition for $\delta \geq |2\alpha - 1|$ is $\delta \geq 2\alpha_H - 1$. On

the other hand, because $\alpha_L \leq 1/2$ and $1 \geq c \geq 1/2$, the relevant condition for $\delta \geq |2\mu - 1|$ is

$2(c\alpha_L + (1 - c)(1 - \alpha_L)) - 1 \geq -\delta$. Substituting $1 - \alpha_L$ for α_H in $\delta \geq 2\alpha_H - 1$ and rearranging gives $\delta \geq 1 - 2\alpha_L$. Similarly rearranging $2(c\alpha_L + (1 - c)(1 - \alpha_L)) - 1 \geq -\delta$ gives $\delta \geq 1 - 2(c\alpha_L + (1 - c)(1 - \alpha_L))$. Given that $\delta \geq 1 - 2\alpha_L$ is at least as restrictive when $c\alpha_L + (1 - c)(1 - \alpha_L) \geq \alpha_L$, I conjecture this is true. The expression simplifies to $1/2 \geq \alpha_L$ is true for all values of α_L . Thus, $\delta \geq |2\alpha - 1|$ is at least as restrictive in the case where $\alpha = \alpha_H$ and $\alpha_i = \alpha_L$.

When $\alpha = \alpha_i = \alpha_L$, the relevant conditions are $2\alpha_L - 1 \geq -\delta$ and $2(c\alpha_L + (1 - c)(1 - \alpha_L)) - 1 \geq -\delta$. Rearranging both expressions, we have $\delta \geq 1 - 2\alpha_L$ and $\delta \geq 1 - 2(c\alpha_L + (1 - c)(1 - \alpha_L))$. Because these expressions are identical to those when $\alpha = \alpha_H$ and $\alpha_i = \alpha_L$, and I showed that $\delta \geq |2\alpha - 1|$ is at least as restrictive in that case, it follows that it is at least as restrictive here as well. Finally, when $\alpha = \alpha_L$ and $\alpha_i = \alpha_H$, the relevant conditions are $2\alpha_L - 1 \geq -\delta$ and $\delta \geq 2(c\alpha_H + (1 - c)(1 - \alpha_H)) - 1$. Substituting $1 - \alpha_H$ for α_L into $2\alpha_L - 1 \geq -\delta$ and rearranging gives $\delta \geq 2\alpha_H - 1$. Because these inequalities are the same as when $\alpha = \alpha_i = \alpha_H$, and I showed that $\delta \geq |2\alpha - 1|$ is at least as restrictive in that case, $\delta \geq |2\alpha - 1|$ is at least as restrictive here also.

Thus, I have shown that $\delta \geq |2\alpha - 1|$ is at least as restrictive as $\delta \geq |2\mu - 1|$ for every combination of α and α_i . Given that $\frac{\delta(\text{Corr}(\varphi, \tau) + 1)}{2} \geq |2\alpha - 1|$ is never less restrictive than $\delta \geq |2\alpha - 1|$, it follows that $\frac{\delta(\text{Corr}(\varphi, \tau) + 1)}{2} \geq |2\alpha - 1|$ is always at least as restrictive as $\delta \geq |2\mu - 1|$. ■

Focusing then on the more restrictive condition, $\frac{\delta(\text{Corr}(\varphi, \tau) + 1)}{2} \geq |2\alpha - 1|$, I now briefly describe how the analysis changes when this condition is not met but the less restrictive condition is. To conserve space, I do not show the proofs of the propositions in this case.

Nevertheless, as I will describe, the results are identical in many cases, and in the few situations where they are not, the reasoning is consistent with the intuition associated with that proposition. When the condition for an interior solution in the case when the principal separates the functions is not met, inequality (1) from Proposition 6-1 becomes:

$$\frac{(1 + \text{Corr}(\varphi, \tau))(\delta^2 + (4\alpha - 2\mu - 1)(2\mu - 1)) + (3 - \text{Corr}(\varphi, \tau))2\delta}{16\delta} > \frac{\alpha}{2}$$

when $\alpha = \alpha_H$ and:

$$\frac{(1 + \text{Corr}(\varphi, \tau))(\delta^2 + (4\alpha - 2\mu - 1)(2\mu - 1)) + (3 - \text{Corr}(\varphi, \tau))2\delta}{16\delta} > \frac{1 - \alpha}{2}$$

when $\alpha = \alpha_L$. Following inequality (1) from Proposition 6-1 which describes the condition under which the principal receives more utility from combining the functions, the above conditions show when the principal will combine the functions when the condition for an interior solution is not met. Reversing the inequality for each expression gives the conditions for separating the functions which corresponds to inequality (2) from Proposition 2.

The fundamental difference between these expressions and Proposition 6-1 is that, when the condition is not met so that $2\alpha - 1 > \frac{\delta(\text{Corr}(\varphi, \tau) + 1)}{2}$ or $\frac{-\delta(\text{Corr}(\varphi, \tau) + 1)}{2} > 2\alpha - 1$, the principal places the entire allocation with one agency or the other. When $\alpha = \alpha_H$, the agency which is tasked with R receives the entire budget. On the other hand, when $\alpha = \alpha_L$, the agency which is tasked with T receives the entire budget. However, because $\alpha_H + \alpha_L = 1$, these two cases generate the exact same level of utility to the principal. Because $P(\varphi = 1) = 1/2$ and also $P(\tau = 1) = 1/2$, the expected utility to the principal in separating the tasks is identical in either case as well. It is given as $EU_p(R + T) = \frac{\alpha_H}{2}$.

Using this, one can replicate the analysis in Proofs 7 through 9 below to show that the propositions as well as the corollary describing how goal ambiguity affects the decision to divide

or combine the goals—Propositions 6-4 and 6-5 as well as Corollary 6-5.1—continue to remain when the condition is not met. Moreover, using the same analysis as in Proof 6, one can show that the propositions describing how task coordination affects the decision to divide or combine the goals—Propositions 6-2 and 6-3—retain much of their character as well. In the case of Proposition 6-2, increasing δ continues to increase the relative utility to the politician from combining functions except when all of the following conditions occur simultaneously: δ becomes sufficiently small relative to α , certainty is sufficiently high, and the agency is correct in its beliefs. The condition whereby increasing δ does not increase the relative utility from combining functions is given as $\delta^2 < (4\alpha - 2\mu - 1)(2\mu - 1)$. The right side of the inequality is always less than one so, even when the agency is completely certain of its correct belief, the politician would need δ small enough such that she receives very little additional utility from fulfilling both goals relative to fulfilling only her favored goal. For example, at the bound for when the politician begins to allocate all resources to one agency, the above condition is never met.

Focusing on the case where increasing δ does increase relative utility to combining the functions since that is the baseline for Proposition 6-3, one can show that at negative correlations, the gain in relative utility from combining tasks at higher levels of δ increases as $Corr(\varphi, \tau)$ goes to zero. However, unlike Proposition 6-3, in the case where the politician allocates all resources to one agency, the gain from combining tasks continues to climb as $Corr(\varphi, \tau)$ becomes more positive as well. Even so, while this suggests a difference from the case when the condition for an interior solution is met, it follows quite naturally from and actually further supports the discussion in Chapter 6 for why higher correlations reduce the gains to combining functions at higher levels of δ .

As described in detail in the chapter, the intuition for why Proposition 6-3 follows drives from the fact that at higher correlations, the politician shifts her allocation closer to the multiple-purpose regulator. This is true because, as the correlation increases, so does the chance that both goals can be achieved simultaneously. Given this, the multiple-purpose regulator provides less value in being able to adjust allocations to provide the best chance to achieve both goals simultaneously. On the other hand, this possibility does not exist when the politician allocates all resources to one agency simply because there is no chance that both tasks can be achieved at the same time. Moreover, as long as $|2\alpha - 1| \geq \frac{\delta(\text{Corr}(\varphi, \tau) + 1)}{2}$ continues to be true even as the correlation increases (which, of course, becomes less likely), the politician will make no modifications to her allocation. Thus, the multiple-purpose regulator continues to offer the relative advantage of being able to adjust its allocation to best achieve both goals. Moreover, this feature of multiple-purpose regulators becomes more important as the correlation increases since the possibilities for jointly achieving both goals increase as well.

This discussion also suggests why the results associated with how goal ambiguity affects the politician's decision remain. Although the expression for the politician's expected utility from separating the tasks changes when she allocates all resources to one agency, it still retains its essential feature—that the politician knows her preference over the tasks. As a result, this advantage to separating the tasks remains even though the actual formulation of the expected utility expression changes. Thus, although they are not identical in every case to the situation where the conditions for an interior solution are met, the results generated to correspond to Propositions 6-1 through 6-5 and Corollary 6-5.1 when the condition for an interior solution to the politician's problem are not met retain the essential features of those when $|2\alpha - 1| \geq$

$\frac{\delta(Corr(\varphi, \tau) + 1)}{2}$ is true. More importantly, they reinforce the key insights from the analysis in the text which focuses on the case where that condition is met.

Proof 6

To prove Proposition 6-3 which states that the gain in relative utility from combining functions at higher levels of δ is greater the closer $Corr(\varphi, \tau)$ is to zero, I rely on inequality (1) from Proposition 6-1. Rearranging expression (1), we can generate a condition which shows the relative utility to the politician from combining functions which I label RU_{RT} :

$$RU_{RT} = 2\delta(1 - Corr(\varphi, \tau)^2) + (Corr(\varphi, \tau) + 1)^2(4\alpha - 2\mu - 1)(2\mu - 1) - 4(2\alpha - 1)^2$$

Now, let us assume that δ increases to $\delta + \varepsilon$ so that $\varepsilon > 0$. Subtracting the relative utility to combining functions when the politician's payoff for joint success is δ from the relative utility when the payoff for joint success is $\delta + \varepsilon$, we have that:

$$RU_{RT}(\delta + \varepsilon) - RU_{RT}(\delta) = \Delta RU_{RT} = 2\varepsilon(1 - Corr(\varphi, \tau)^2)$$

The expression for ΔRU_{RT} always positive except when $Corr(\varphi, \tau) = 1$ or $Corr(\varphi, \tau) = -1$ because $-1 \leq Corr(\varphi, \tau) \leq 1$. This proves Proposition 6-2 which states that the relative utility that the politician receives in combining functions increases as δ increases.

Using ΔRU_{RT} , I can now prove Proposition 6-3 directly by taking the partial derivative with respect to $Corr(\varphi, \tau)$ which gives:

$$\frac{\partial \Delta RU_{RT}}{\partial Corr(\varphi, \tau)} = -4\varepsilon Corr(\varphi, \tau)$$

Because $-1 \leq Corr(\varphi, \tau) \leq 1$, it follows that $\frac{\partial \Delta RU_{RT}}{\partial Corr(\varphi, \tau)} > 0$ when $Corr(\varphi, \tau) < 0$, that

$\frac{\partial \Delta RU_{RT}}{\partial Corr(\varphi, \tau)} < 0$ when $Corr(\varphi, \tau) > 0$, and that $\frac{\partial \Delta RU_{RT}}{\partial Corr(\varphi, \tau)} = 0$ when $Corr(\varphi, \tau) = 0$. The fact that

$\frac{\partial \Delta RU_{RT}}{\partial Corr(\varphi, \tau)} > 0$ when $Corr(\varphi, \tau) < 0$ shows that the relative gain to combining functions at higher levels of δ is increased when the correlation is increased as long as the correlation is negative. Furthermore, given that $\frac{\partial \Delta RU_{RT}}{\partial Corr(\varphi, \tau)} < 0$ when $Corr(\varphi, \tau) > 0$, the relative gain to combining functions at higher levels of δ is decreased as the correlation increases when the correlation is positive. Because $\frac{\partial \Delta RU_{RT}}{\partial Corr(\varphi, \tau)} = 0$ when $Corr(\varphi, \tau) = 0$, $Corr(\varphi, \tau) = 0$ represents a maximum under these conditions. Thus, I have shown that the gain in relative utility from combining functions at higher levels of δ is greater the closer $Corr(\varphi, \tau)$ is to zero. ■

Proof 7

The proof of Proposition 6-4 proceeds in two parts. I first show that when the agency is correct in its beliefs, there is uncertainty, and $Corr(\varphi, \tau) > -1$, the politician derives relatively greater utility from combining the goals the greater is the agency's confidence regarding its belief. I then show that when the agency is not correct, there is uncertainty, and $Corr(\varphi, \tau) > -1$, the politician's relative utility in combining the goals increases as the agency becomes less certain about its belief. To do so, I use the expression for RU_{RT} from Proof 6:

$$RU_{RT} = 2\delta(1 - Corr(\varphi, \tau)^2) + (Corr(\varphi, \tau) + 1)^2(4\alpha - 2\mu - 1)(2\mu - 1) - 4(2\alpha - 1)^2$$

Because in the first case, the proposition assumes that the agency is correct in its beliefs, we have that $\alpha = \alpha_i$ where the true value (α) is the same as the agency's belief (α_i). To use the most general case, I assume that the true value of α is α_j where $j = \{L, H\}$. Given this, by its definition, $\mu = c\alpha_j + (1 - c)(1 - \alpha_j)$. Substituting μ and $\alpha = \alpha_j$ into the expression for RU_{RT} gives:

$$\begin{aligned}
RU_{RT} &= 2\delta(1 - \text{Corr}(\varphi, \tau)^2) \\
&\quad + (\text{Corr}(\varphi, \tau) + 1)^2 \left(4\alpha_j - 2 \left(c\alpha_j + (1 - c)(1 - \alpha_j) \right) - 1 \right) \left(2 \left(c\alpha_j + (1 - c)(1 - \alpha_j) \right) \right. \\
&\quad \left. - 1 \right) - 4(2\alpha_j - 1)^2
\end{aligned}$$

Using algebraic manipulation, one can show that $\left(4\alpha_j - 2 \left(c\alpha_j + (1 - c)(1 - \alpha_j) \right) - 1 \right) \left(2 \left(c\alpha_j + (1 - c)(1 - \alpha_j) \right) - 1 \right)$ reduces to $(8c - 3 - 4c^2)(2\alpha_j - 1)^2$. Thus, RU_{RT}

becomes:

$$RU_{RT} = 2\delta(1 - \text{Corr}(\varphi, \tau)^2) + (\text{Corr}(\varphi, \tau) + 1)^2(8c - 3 - 4c^2)(2\alpha_j - 1)^2 - 4(2\alpha_j - 1)^2$$

Taking the partial derivative with respect to c —which shows how RU_{RT} changes as the agency's confidence regarding its belief increases—gives:

$$\frac{\partial RU_{RT}}{\partial c} = (\text{Corr}(\varphi, \tau) + 1)^2(2\alpha_j - 1)^2(8 - 8c)$$

Unless $\text{Corr}(\varphi, \tau) = -1$ in which case $(\text{Corr}(\varphi, \tau) + 1)^2 = 0$, $(\text{Corr}(\varphi, \tau) + 1)^2 > 0$ for all values of $\text{Corr}(\varphi, \tau)$ since, by definition, $\text{Corr}(\varphi, \tau) \geq -1$. Furthermore, unless $\alpha_j = 1/2$,

$(2\alpha_j - 1)^2 > 0$ for all values of α_j . When $\alpha_j = 1/2$, $\alpha_H = \alpha_L$ and so there is no uncertainty.

When there is no uncertainty, the degree of certainty cannot increase and so the proposition does not apply. Finally, when there is uncertainty, $8 - 8c > 0$ as well. This is true because, by assumption, $1 \geq c \geq 1/2$, and when $c = 1$, there is no uncertainty over the agency's belief.

Thus, since each term of $\frac{\partial RU_{RT}}{\partial c}$ is positive except when $\text{Corr}(\varphi, \tau) = -1$, $\frac{\partial RU_{RT}}{\partial c}$ is always positive except when $\text{Corr}(\varphi, \tau) = -1$. Hence, RU_{RT} increases when c increases and so I have shown that when the agency is correct in its beliefs, the politician derives relatively greater utility from combining the goals the greater is the agency's confidence regarding its belief.

In the same way, I can show that the opposite is true when $\alpha \neq \alpha_i$. Again, solving in the general case, I assume that $i \neq j$ where α_i represents the agency's belief and α_j is the true value of α . Using the same expression for RU_{RT} and substituting for μ , α_i , and $\alpha = \alpha_j$, RU_{RT} becomes:

$$RU_{RT} = 2\delta(1 - \text{Corr}(\varphi, \tau)^2) + (\text{Corr}(\varphi, \tau) + 1)^2(4\alpha_j - 2(c\alpha_i + (1 - c)(1 - \alpha_i)) - 1)(2(c\alpha_i + (1 - c)(1 - \alpha_i)) - 1) - 4(2\alpha_j - 1)^2$$

Replacing $\alpha_i = 1 - \alpha_j$ since α can only take two values where, by assumption, $\alpha_i + \alpha_j = 1$, the expression is now:

$$RU_{RT} = 2\delta(1 - \text{Corr}(\varphi, \tau)^2) + (\text{Corr}(\varphi, \tau) + 1)^2(4\alpha_j - 2(c(1 - \alpha_j) + (1 - c)\alpha_j) - 1)(2(c(1 - \alpha_j) + (1 - c)\alpha_j) - 1) - 4(2\alpha_j - 1)^2$$

Using algebraic manipulation, one can show that $(4\alpha_j - 2(c(1 - \alpha_j) + (1 - c)\alpha_j) - 1)(2(c(1 - \alpha_j) + (1 - c)\alpha_j) - 1)$ simplifies to $(2\alpha_j - 1)(1 - 2\alpha_j)(4c^2 - 1)$. Substituting into RU_{RT} , we have:

$$RU_{RT} = 2\delta(1 - \text{Corr}(\varphi, \tau)^2) + (\text{Corr}(\varphi, \tau) + 1)^2(2\alpha_j - 1)(1 - 2\alpha_j)(4c^2 - 1) - 4(2\alpha_j - 1)^2$$

Taking the partial derivative with respect to c gives:

$$\frac{\partial RU_{RT}}{\partial c} = (\text{Corr}(\varphi, \tau) + 1)^2(2\alpha_j - 1)(1 - 2\alpha_j)8c$$

Unless $\text{Corr}(\varphi, \tau) = -1$ or $\alpha_j = 1/2$ such that there is no uncertainty, $(\text{Corr}(\varphi, \tau) + 1)^2 > 0$ and $(2\alpha_j - 1)(1 - 2\alpha_j) < 0$. Thus, for any value of c where, by assumption $1 \geq c \geq 1/2$,

$$\frac{\partial RU_{RT}}{\partial c} < 0. \text{ } RU_{RT} \text{ therefore decreases when } c \text{ increases, and } RU_{RT} \text{ increases when } c \text{ decreases}$$

for all values of c . Thus, I have shown that I when the agency's belief is not correct, the

politician's relative utility in combining the goals increases as the agency becomes less certain about its belief. ■

Proof 8

The proof of Proposition 6-5 has two parts. First, I show that the larger is the agency's uncertainty regarding a true belief, the greater is the politician's relative utility in separating the functions. Second, I demonstrate that, for any given level of uncertainty, the relatively greater utility that the politician derives from separating the tasks when ambiguity is present is reduced when the correlation between φ and τ is greater.

The first part of the proof is simply reverses Proof 7. Rearranging inequality (2) from Proposition 6-1, I can generate an expression which shows the utility that the principal receives in separating the tasks relative to combining them which I label RU_{R+T} :

$$RU_{R+T} = 4(2\alpha - 1)^2 - 2\delta(1 - \text{Corr}(\varphi, \tau)^2) - (\text{Corr}(\varphi, \tau) + 1)^2(4\alpha - 2\mu - 1)(2\mu - 1)$$

Because the proposition assumes $\alpha = \alpha_i$, I use the result from Proof 7 that $(4\alpha - 2\mu - 1)(2\mu - 1) = (8c - 3 - 4c^2)(2\alpha_j - 1)^2$ where α_j is the true value of α . Substituting into the expression for RU_{R+T} gives:

$$RU_{R+T} = 4(2\alpha_j - 1)^2 - 2\delta(1 - \text{Corr}(\varphi, \tau)^2) - (\text{Corr}(\varphi, \tau) + 1)^2(8c - 3 - 4c^2)(2\alpha_j - 1)^2$$

Now, because the first part of the proposition is written from the perspective of increases in uncertainty instead of certainty, for convenience, I introduce the variable b and set it equal to $1 - c$. Since increasing c increases certainty, increasing b increases uncertainty. Substituting $c = 1 - b$ changes the above expression to:

$$RU_{R+T} = 4(2\alpha_j - 1)^2 - 2\delta(1 - \text{Corr}(\varphi, \tau)^2) \\ - (\text{Corr}(\varphi, \tau) + 1)^2(8(1 - b) - 3 - 4(1 - b)^2)(2\alpha_j - 1)^2$$

Because $8(1 - b) - 3 - 4(1 - b)^2$ reduces to $1 - 4b^2$, I can rewrite RU_{R+T} as:

$$RU_{R+T} = 4(2\alpha_j - 1)^2 - 2\delta(1 - \text{Corr}(\varphi, \tau)^2) - (\text{Corr}(\varphi, \tau) + 1)^2(1 - 4b^2)(2\alpha_j - 1)^2$$

Taking the partial derivative with respect to b gives:

$$\frac{\partial RU_{R+T}}{\partial b} = (\text{Corr}(\varphi, \tau) + 1)^2(2\alpha_j - 1)^2 8b$$

Since $\frac{\partial RU_{R+T}}{\partial b} > 0$ except when $\alpha_j = 1/2$ —in which case there is no uncertainty as described in Proof 7—or when $\text{Corr}(\varphi, \tau) = -1$, I have shown that increasing uncertainty increases the relative utility to the politician in separating the functions.

For the second part of the proof, let us assume that we have two states of the world, one where the true value of α is α_H and another where the true value of α is $\alpha_H + \epsilon$ where $\epsilon > 0$. Because $\alpha_H + \epsilon$ is larger than α_H and δ has not changed, ambiguity will play a greater role in the latter case. One can show that this scenario is identical to one where the true value of α is α_L in one state of the world and $\alpha_L - \epsilon$ in another. However, to save space, I do not replicate the results for that case. The idea is simply that ambiguity becomes more important when the payoffs to success on either task become more extreme. What I will now show is that, holding the agency's beliefs as well as its uncertainty over those beliefs constant, the greater importance of goal ambiguity in the latter case will increase the relative gain from separating the functions. However, that gain is diminished the greater is the correlation between φ and τ .

Using the expression for RU_{R+T} derived earlier, I now subtract $RU_{R+T}(\alpha_H)$ from $RU_{R+T}(\alpha_H + \epsilon)$ where the former represents the relative utility to the politician in separating the tasks when ambiguity is less of a factor and the second reflects the case when it is more

important. Again, because, ambiguity is a detriment to multiple-purpose performance, we will see that the difference between them is positive. The expression for $RU_{R+T}(\alpha_H + \epsilon)$ can be written as:

$$RU_{R+T}(\alpha_H + \epsilon) = (2(\alpha_H + \epsilon) - 1)^2(4 - (Corr(\varphi, \tau) + 1)^2(1 - 4b^2)) - 2\delta(1 - Corr(\varphi, \tau)^2)$$

and the expression for $RU_{R+T}(\alpha_H)$ can be written as:

$$RU_{R+T}(\alpha_H) = (2\alpha_H - 1)^2(4 - (Corr(\varphi, \tau) + 1)^2(1 - 4b^2)) - 2\delta(1 - Corr(\varphi, \tau)^2)$$

Subtracting the second from the first and simplifying gives:

$$\Delta RU_{R+T} = RU_{R+T}(\alpha_H + \epsilon) - RU_{R+T}(\alpha_H) = (4\epsilon(\epsilon + 2\alpha_H - 1))(4 - (Corr(\varphi, \tau) + 1)^2(1 - 4b^2))$$

To show that $\Delta RU_{R+T} > 0$, I need only to show that both terms are positive. The first, $4\epsilon(\epsilon + 2\alpha_H - 1)$, is always positive because $\alpha_H \geq 1/2$ and $\epsilon > 0$. The second term, $(4 - (Corr(\varphi, \tau) + 1)^2(1 - 4b^2))$, is positive unless $Corr(\varphi, \tau) = 1$ and $b = 1/2$. Of course, when $Corr(\varphi, \tau) = 1$, there is no ability to increase $Corr(\varphi, \tau)$ so that case is not relevant. When $b = 1/2$, there is no ability to further increase uncertainty since $b = 1 - c$ and, by assumption, $1 \geq c \geq 1/2$. Setting this case aside, because each term is positive, their product must also be positive and so $\Delta RU_{R+T} > 0$.

Given that I have shown that the increase in ambiguity has simultaneously increased the relative gain to the politician in separating the functions, I now show how that gain changes as $Corr(\varphi, \tau)$ increases. To do so, I take the partial derivative of ΔRU_{R+T} with respect to $Corr(\varphi, \tau)$:

$$\frac{\partial \Delta RU_{R+T}}{\partial Corr(\varphi, \tau)} = -(4\epsilon(\epsilon + 2\alpha_H - 1))(2(Corr(\varphi, \tau) + 1)(1 - 4b^2))$$

which shows how the gain to separating tasks from ambiguity changes when the correlation between φ and τ increases. I have already demonstrated that $4\epsilon(\epsilon + 2\alpha_H - 1)$ is always

positive. Furthermore, as long as $b \neq 1/2$ and $Corr(\varphi, \tau) \neq -1$, $(2(Corr(\varphi, \tau) + 1)(1 - 4b^2))$ is positive as well. Thus, except the boundary cases where changing $Corr(\varphi, \tau)$ has no effect (when $b = 1/2$ or when $Corr(\varphi, \tau) = -1$), $\frac{\partial \Delta RU_{R+T}}{\partial Corr(\varphi, \tau)}$ is everywhere else negative. This demonstrates that the relatively greater utility that the politician receives in separating the tasks in the presence of ambiguity is lessened at higher levels of correlation between φ and τ . ■

Proof 9

To prove Corollary 6-5.1, I begin by using the partial derivative of RU_{RT} with respect to c derived in Proof 7 when the agency is correct in its belief. I show that as $Corr(\varphi, \tau)$ increases, so does the effect of increasing c on RU_{RT} . The expression for $\frac{\partial RU_{RT}}{\partial c}$ from Proof 7 is given as:

$$\frac{\partial RU_{RT}}{\partial c} = (Corr(\varphi, \tau) + 1)^2 (2\alpha_j - 1)^2 (8 - 8c)$$

Taking the derivative of this expression with respect to $Corr(\varphi, \tau)$ (i.e. the cross-partial derivative) gives:

$$\frac{\partial^2 RU_{RT}}{\partial c \partial Corr(\varphi, \tau)} = 2(Corr(\varphi, \tau) + 1)(2\alpha_j - 1)^2 (8 - 8c)$$

which shows the how the effect of increasing c on RU_{RT} changes when $Corr(\varphi, \tau)$ is increasing.

Unless $Corr(\varphi, \tau) = -1$, $Corr(\varphi, \tau) + 1 > 0$ by the definition of correlation. Moreover, unless $\alpha_j = 1/2$ or $c = 1$ which, as explained in Proof 7, means that there is no uncertainty, both

$(2\alpha_j - 1)^2$ and $8 - 8c$ are also positive. As a result, $\frac{\partial^2 RU_{RT}}{\partial c \partial Corr(\varphi, \tau)} > 0$ for all values of c since,

by assumption, $1 \geq c \geq 1/2$. Therefore, because the positive effect that increasing c has on RU_{RT} increases when $Corr(\varphi, \tau)$ is increased, I have shown that efforts to reduce uncertainty by

increasing c have a greater positive impact on the relative utility to the principal of combining functions when φ and τ are more positively correlated. ■

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